

<b>BAT 1</b>	BAT is to implement and adhere to an environmental management system (EMS).	Applicable	<b>In place.</b> The facility is certified to ISO 14001 Environmental Management System, ISO 9001 Quality System and OHSAS 18001 and copies of the Certificates are included in Attachment C. The EMS will be updated following the grant of the IE Licence.
<b>BAT 2</b>	BAT is to ensure the provision of full details of the activities carried out on-site.	Applicable	<b>In place.</b> Described in the IE Licence Application and the EIS.
<b>BAT 3</b>	BAT is to have a good housekeeping procedure in place, which will also cover maintenance and an adequate training programme, covering the preventive actions that workers need to take on health and safety issues and environmental risks.	Applicable	<b>In place.</b> Through conditions of the existing Licence (W0211-01).
<b>BAT 4</b>	BAT is to try to have a close relationship with the waste producer/holder	Applicable	<b>In place.</b> ERAS ECO Ltd regularly liaises with its customers.
<b>BAT 5</b>	BAT is to have sufficient staff available and on duty with the requisite qualifications at all times. All personnel should undergo specific job training and further education.	Applicable	<b>In place.</b> The installation is properly manned and supervised and a suitably qualified and experienced Site Manager is employed. Details are included in Section C of the IE licence application.
<b>BAT 6</b>	BAT is to have a concrete knowledge of the waste IN.	Applicable	<b>In place.</b> Waste acceptance procedure that provides instruction to staff on the types of waste that can be accepted are in place at the site in accordance with existing Licence conditions.
<b>BAT 7</b>	BAT is to implement a pre-acceptance procedure.	Not Applicable	Given the type of wastes accepted and the types of processing carried out, pre-acceptance procedures are not required for all of the wastes.
<b>BAT 8</b>	BAT is to implement a waste acceptance procedure.	Applicable	<b>In place.</b> The existing Waste Licence requires the preparation of waste acceptance procedures including the requirement for a detailed inspection of all wastes delivered to the installation. Refer to BAT 6.
<b>BAT 9</b>	BAT is to implement different sampling procedures for all different incoming waste vessels.	Not Applicable	Given the nature of the wastes accepted and the types of processing carried out, sampling procedures are not required.
<b>BAT 10</b>	BAT is to have a reception facility that includes inter alia a quarantine area.	Applicable	<b>In place.</b> Waste inspection and Quarantine areas are provided, as stipulated by the Licence.
<b>BAT 11</b>	BAT is to analyse the waste OUT	Applicable	<b>In place.</b> Schedule C.4 of the Licence requires ERAS ECO Ltd to maintain

	according to the relevant parameters important for the facility.		records of the nature and composition of waste consigned from the installation. All wastes consigned are recorded using LoW codes.
<b>BAT 12</b>	BAT is to have a system in place to guarantee the traceability of waste treatment.	Applicable	<b>In place.</b> Refer to BAT 11
<b>BAT 13</b>	BAT is to have and apply mixing / blending rules.	Applicable	<b>In place.</b> Operational procedure prepared that specifies how wastes to be treated in the digesters are mixed
<b>BAT 14</b>	BAT is to have a segregation and compatibility procedure in place.	Applicable	<b>In place.</b> The Licence requires the provision of separate storage and processing areas for sewage sludge and non-sewage sludge wastes.
<b>BAT 15</b>	BAT is to have an approach for improving waste treatment efficiency.	Applicable	<b>In place.</b> ERAS ECO Ltd regularly reviews performance efficiency.
<b>BAT 16</b>	BAT is to produce a structured accident management plan.	Applicable	<b>In place.</b> Condition 9 of the Licence requires the preparation of an Accident Prevention Procedure, which is in place for the site.
<b>BAT 17</b>	BAT is to have and properly use an incident diary.	Applicable	<b>In place.</b> Condition 9 requires the maintenance of an incidents register which is reported on annually in the AER.
<b>BAT 18</b>	BAT is to have a noise and vibration management plan in place as part of the EMS.	Not Applicable	
<b>BAT 19</b>	BAT is to consider future decommissioning. <sup>1</sup>	Applicable	<b>In place.</b> Condition 10 of the Licence addresses the Closure, Restoration and Aftercare Management Plan for the installation. This has been completed for the site.
<b>BAT 20</b>	BAT is to provide a breakdown of the energy consumption and generation.	Applicable	<b>In place.</b> Energy consumption is recorded and reported in the AER prepared in compliance with the Waste Licence.
<b>BAT 21</b>	BAT is to continuously increase the energy efficiency of the installation. <sup>2</sup>	Applicable	<b>In place.</b> ERAS ECO Ltd reviews energy usage annually.
<b>BAT 22</b>	BAT is to carry out an internal benchmarking (e.g. on an annual basis) of raw materials consumption.	Applicable	<b>In place.</b> ERAS ECO Ltd monitors material consumption and reports on same annually in the AER.
<b>BAT 23</b>	BAT is to explore the options for the use of waste as a raw material for the treatment of other wastes.	Not Applicable	Given the nature of the wastes accepted and the types of processing carried out, the use of waste as a raw material in the treatment of other wastes is not applicable.
<b>BAT 24</b>	<i>Storage and Handling</i> <sup>3</sup>		

<b>a)</b>	BAT is to ensure storage areas are away from watercourses and sensitive perimeters, and located to eliminate or minimise the double handling of wastes within the installation.	Applicable	<b>In place.</b> The Licence requires that all waste handling and storage is carried out in designated areas that are protected against spillage and leachate run-off. All waste and materials storage areas are away from water courses and sensitive perimeters and positioned to minimise double handling.
<b>b)</b>	BAT is to ensure that the storage area drainage infrastructure can contain all possible contaminated run-off and that drainage from incompatible wastes cannot come into contact with each other.	Applicable	<b>In place.</b> The Licence requires measures to be put in place to prevent the discharge of polluting substances to surface waters. Such measures include the provision of silt traps and interceptors which are in place on-site.
<b>c)</b>	BAT is to ensure use of a dedicated area/store equipped with all necessary measures related to the specific risk of the wastes for sorting and repackaging laboratory smalls or similar waste.	Not applicable	
<b>d)</b>	BAT is to handle odorous materials in fully enclosed or suitably abated vessels and storing them in enclosed buildings connected to abatement.	Applicable	<b>In place &amp; Proposed.</b> The Licence requires the provision of an odour abatement system for Building 2 which is in place on-site. Details of existing and proposed odour management systems are described in Sections D, E and F of the IE Licence Application.
<b>e)</b>	BAT is to ensure that all connections between the vessels are capable of being closed via valves.	Applicable	<b>In place.</b>
<b>f)</b>	BAT is to ensure measures are available to prevent the building up of sludge higher than a certain level and the emergence of foams that may affect such measures in liquid tanks.	Applicable	<b>In Place.</b>
<b>g)</b>	BAT is equipping tanks and vessels with suitable abatement systems when volatile emissions may be generated.	Not Applicable	Liquid wastes containing volatile compounds are not accepted at the installation.
<b>h)</b>	BAT is to store organic waste liquid with	Not Applicable	Organic waste liquids with low flash points are not accepted at the installation.

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	a low flashpoint under a nitrogen atmosphere to keep it inertised.		
<b>BAT 25</b>	BAT is to separately bund the liquid decanting and storage areas using bunds which are impermeable and resistant to the stored materials.	Applicable	<b>In place.</b> The Licence requires all tank and drum storage areas be bunded, with the bund design to have regard to the Agency's guidelines on the Storage and Transfer of Materials for Scheduled Activities. The Condition also requires that all tanks and pipelines be impervious to the materials contained therein.
<b>BAT 26</b>	<i>Tank and Process Pipework</i>		
<b>a)</b>	BAT is to clearly label all vessels with regard to their contents and capacity.	Applicable	<b>In place.</b> The Licence stipulates that all tanks, containers and drums are clearly labelled.
<b>b)</b>	BAT is to ensure the label differentiates between wastewater and process water, combustible liquid and combustible vapour and the direction of flow.	Applicable	<b>Proposed.</b> Surface water gullies, foul effluent and process water inspection chambers will be colour coded.
<b>c)</b>	BAT is to keep records for all tanks, detailing the unique identifier; capacity; its construction, including materials; maintenance schedules and inspection results; fittings; and the waste types which may be stored / treated in the vessel, including flashpoint limits.	Applicable	<b>In place.</b> The Licence requires the integrity and water tightness of all building structures, tanks, pipelines and containers and their resistance to penetration by water or other materials carried or stored therein to be tested at least once every three years and the results maintained on-site for inspection. The condition also requires a written record of all integrity tests and any maintenance or remedial work arising from them to be made.
<b>BAT 27</b>	BAT is to take measures to avoid problems that may be generated from the storage/accumulation of waste.	Applicable	<b>In place.</b> Condition 3.19.3 of the Licence stipulates that the quantity of waste accepted on a daily basis shall not exceed the duty capacity of the processing plant. Any exceedance of this intake level shall be treated as an incident.
<b>BAT 28</b>	<i>Waste Handling Techniques</i>		
<b>a)</b>	BAT is to have systems and procedures in place to ensure that wastes are transferred to the appropriate storage area safely.	Applicable	<b>In place.</b> Condition 8 of the Licence require the preparation of procedures for all waste operations including waste movement and storage within the installation.
<b>b)</b>	BAT is to have a management system for the loading and unloading of waste in the installation, which also takes into consideration any risks that these activities may incur.	Applicable	<b>In place.</b> ERAS ECO Ltd has prepared waste acceptance procedures, which take into consideration the assessment of risks.

<b>c)</b>	BAT is to ensure that a qualified person attends the site to check the laboratory smalls, the old original waste, waste from an unclear origin or undefined waste (especially if drummed), to classify the substances accordingly and to package into specific containers.	Applicable	<b>In place.</b> The installation does not accept laboratory smalls, waste from an unclear origin or unidentified waste.
<b>d)</b>	BAT is to ensure that damaged hoses, valves and connections are not used.	Applicable	<b>In place / Proposed.</b> ERAS ECO Ltd implements a preventative maintenance programme. This will be updated to include regular inspection of the AD pipework and connections, once installed.
<b>e)</b>	BAT is to collect exhaust gas from vessels and tanks when handling liquid waste.	Applicable	<b>Proposed.</b> The gases from the AD digesters will be collected and used as a fuel in the on-site CHP plant.
<b>f)</b>	BAT is to unload solids and sludge in closed areas which are fitted with extractive vent systems linked to abatement equipment when the handled waste can potentially generate emission to air (e.g. odours, dust, VOCs)	Applicable	<b>In place / Proposed.</b> Conditions 3.24 and 6.8 of the Licence requires the provision and maintenance of measures for the control of odour emissions. New odour control measures will be installed as part of the proposed non-hazardous mixed waste processing facility in the Waste Recovery Building.
<b>g)</b>	BAT is to use a system to ensure the bulking of different batches only takes place with compatibility testing.	Not Applicable	Hazardous waste is not accepted at the facility.
<b>BAT 29</b>	BAT is to ensure that the bulking /mixing to or from packaged waste only takes place under instruction and supervision and is carried out by trained personnel.	Applicable	<b>In place.</b> All waste handling, including baling of the processed wastes, is carried out by trained personnel in accordance with documented procedures.
<b>BAT 30</b>	BAT is to ensure that chemical incompatibilities guide the segregation required during storage.	Not Applicable	Chemically incompatible wastes are not accepted at the installation.
<b>BAT 31</b>	<i>Handling of Containerised Waste</i>	Not Applicable	ERAS ECO Ltd does not accept containerised waste
<b>a)</b>	Storing containerised waste under cover		
<b>b)</b>	Making provision for storage of substances that are sensitive to light, heat and water.		
<b>BAT 32</b>	BAT is to perform crushing, shredding and sieving operations in areas fitted	Applicable	<b>In place / Proposed.</b> The waste recovery building will be fitted with an odour abatement system while the sludge treatment building already has such a

	with extractive vent systems linked to abatement equipment when handling materials that can generate emission to air (e.g. odours, dust, VOCs).		system.
<b>BAT 33</b>	BAT is to perform crushing/shredding operations under full encapsulation and under an inert atmosphere for drums/containers containing flammable or highly volatile substances.	Not Applicable	Drums/containers containing flammable or highly volatile substances are not crushed/shredded at the installation.
<b>BAT 34</b>	<i>Washing Processes</i>		
<b>a)</b>	BAT is to identify the components that may be present in the items to be washed (e.g. solvents).	Not Applicable	
<b>b)</b>	BAT is to transfer washings to appropriate storage and then treating them in the same way as the waste from which they were derived.	Applicable	<b>In Place.</b> Washing processes (vehicle and yard / floor washing) are carried out at the installation and washwater is sent to the on-site wastewater treatment plant for treatment.
<b>c)</b>	BAT is to use treated waste water from the WT plant for washing instead of fresh water.	Not Applicable	Only collected rainfall water will be used for on-site washing requirements.
	<i>Air Emission Treatment<sup>4</sup></i>		
<b>BAT 35</b>	BAT is to restrict the use of open topped tanks, vessels and pits.	Applicable	<b>In place.</b> All tanks used to store liquid wastes and liquid final products are covered.
<b>BAT 36</b>	BAT is to use an enclosed system with extraction, or under depression, to a suitable abatement plant. This technique is especially relevant to processes which involve the transfer of volatile liquids,	Not Applicable	Volatile liquid waste are not accepted at the facility.

	including during tanker charging/discharging.		
<b>BAT 37</b>	BAT is to apply a suitably sized extraction system which can cover the holding tanks, pre-treatment areas, storage tanks, mixing/reaction tanks and the filter press areas, or to have in place a separate system to treat the vent gases from specific tanks.	Applicable	<b>In place / Proposed.</b> The existing sludge drying building has a suitably sized air abatement system.  Suitably sized extraction systems will be provided in the AD digester tanks to collect the biogas. Also, the new abatement system for the Waste Recovery Building will be suitably sized.
<b>BAT 38</b>	BAT is to correctly operate and maintain the abatement equipment, including the handling and treatment /disposal of spent scrubber media.	Applicable	<b>In place / Proposed.</b> Operational procedures are in place and will be updated to reflect new systems on-site.
<b>BAT 39</b>	BAT is to have a scrubber system in place for the major inorganic gaseous releases from those unit operations which have a point discharge for process emissions.	Applicable	<b>Proposed.</b> Abatement system will be installed to treat anaerobic digestion off-gases prior to sending these to the CHP plant.
<b>BAT 40</b>	BAT is to have leak detection and repair procedures in place in installations a) handling a large number of piping components and storage and b) compounds that may leak easily and create an environmental problem.	Applicable	<b>In place / Proposed.</b> ERAS ECO Ltd has a preventative maintenance programme that will include regular inspections of the pipework and connections in the proposed AD Plant to identify and repair/replace damaged hoses and connections.  Condition 6.14 of the Licence require routine integrity testing of underground pipes and tanks and that records of same are maintained at the installation.
<b>BAT 41</b>	BAT is to reduce air emission to the following levels VOC 7-20mg/Nm <sup>3</sup> and PM to 2-20mg/Nm <sup>3</sup> by using suitable techniques referenced in BAT 35 to 41.	Applicable	<b>Proposed:</b> The BAT air emission levels apply to all waste management facilities and are not specific to biological treatment plants. The objective of BAT emission levels is to ensure the activity does not result in an adverse impact on air quality or breach of a relevant Air Quality Standard. Air emission dispersion modelling has confirmed that the emissions from the installation will not result in an exceedance of an air quality standard.
	<i>Wastewater Management</i>		
<b>BAT 42</b>	<i>Reduce the water use and the contamination of water</i>		

<b>a)</b>	BAT is to apply site waterproofing and storage retention methods.	Applicable	<b>In place.</b> Condition 8.5 of the Licence requires that all waste unloading / loading as well as storage is carried out in designated areas that are protected against spillage and leachate run-off. Condition 3.6 of requires all tank and drum storage areas be bunded, with the bund design to have regard to the Agency's guidelines on the Storage and Transfer of Materials for Scheduled Activities and that all tanks and pipelines be impervious to the materials contained therein.
<b>b)</b>	BAT is to carry out regular checks of the tanks and pits especially when they are underground.	Applicable	<b>In place.</b> Condition 6.14 of the Licence requires the integrity and water tightness of all building structures, tanks, pipelines and containers and their resistance to penetration by water or other materials carried or stored therein to be tested at least once every three years and the results reported to the Agency on each occasion. The condition also requires a written record of all integrity tests and any maintenance or remedial work arising from them to be maintained by the Licensee.
<b>c)</b>	BAT is to apply separated water drainage according to the pollution load (roof water, road water, process water).	Applicable	<b>In place.</b> There are separate drainage systems in place for stormwater runoff, foul effluent and process water effluent.
<b>d)</b>	BAT is to apply a security collection basin.	Applicable	<b>In place.</b> An attenuation tank is located on the surface water drainage system to regulate the discharge to the river.
<b>e)</b>	BAT is to performing regular water audits, with the aim of reducing water consumption and preventing water contamination.	Applicable	<b>In place.</b> ERAS ECO Ltd reviews water consumption annually as part of the preparation of the Waste Licence AER.
<b>f)</b>	BAT is to segregate process water from rainwater.	Applicable	<b>In place (ref BAT 42c).</b>
<b>BAT 43</b>	BAT is to have procedures in place to ensure that the effluent specification is suitable for the on-site effluent treatment system or discharge.	Applicable	<b>In place.</b> There is an on-site treatment plant which has associated operational procedures. Schedule C.3.2 of the Waste Licence specifies the emission limit values for the discharge to sewer (SE1).
<b>BAT 44</b>	BAT is to avoid the effluent by-passing the treatment plant systems.	Applicable	<b>In place.</b> All process effluent from the operational areas on-site is collected and directed to the WWTP before being treated and discharged to Youghal Harbour via a Council sewer.
<b>BAT 45</b>	BAT is to have in place and operate an enclosure system whereby rainwater falling on the processing areas is	Not applicable	All waste processing is carried out indoors.



	collected along with tanker washings, occasional spillages, drum washings, etc. and returned to the processing plant or collected in a combined interceptor.		
<b>BAT 46</b>	BAT is to segregate the water collecting systems for potentially more contaminated waters from less contaminated water.	Applicable	<b>In place.</b> (Ref BAT 42 c).
<b>BAT 47</b>	BAT is to have a full concrete base in the whole treatment area that falls to internal site drainage systems which lead to storage tanks or to interceptors that can collect rainwater and any spillage. Interceptors with an overflow to sewer usually need automatic monitoring systems, such as pH checks, which can shut down the overflow.	Applicable	<b>In place / Proposed.</b> Drainage from concreted open yards passes through a silt trap, interceptor and attenuation tank. It is proposed to install continuous on-line monitoring of Total Organic Carbon of the discharge from the attenuation tank.
<b>BAT 48</b>	BAT is to collect the rainwater in a special basin for checking, treatment if contaminated and further use.	Applicable	<b>In place.</b> Adequate retention capacity is already provided.
<b>BAT 49</b>	BAT is to maximise the re-use of treated waste waters and use of rainwater in the installation	Applicable	<b>Proposed.</b> It is proposed to utilise rainwater collected in the on-site attenuation tank for on-site use.
<b>BAT 50</b>	BAT is to conduct daily checks on the effluent management system and to maintain a log of all checks carried out, by having a system for monitoring the effluent discharge and sludge quality in place.	Applicable	<b>In place.</b> Various conditions of the existing Waste Licence requires the ongoing monitoring of all effluent / stormwater systems.
<b>BAT 51</b>	BAT is to firstly identify waste waters that may contain hazardous compounds, secondly segregate the previously identified wastewater streams on-site and thirdly, specifically treat waste water on-site or off-site.	Applicable	<b>In place.</b> Segregation of the various effluent streams does take place on-site.
<b>BAT 52</b>	BAT is to ultimately after the application	Applicable	<b>In place.</b> Sanitary wastewater is treated in an on-site Puraflo© system. Run-

	of BAT number 42, select and carry out the appropriate treatment technique for each type of waste water.		off from operational yards is passed through silt traps and oil interceptor before being collected in an attenuation tank and then discharged to sewer. Process effluent is treated in the on-site WWTP and then discharged to sewer.
<b>BAT 53</b>	BAT is to implement measures to increase the reliability with which the required control and abatement performance can be carried out.	Applicable	<b>In place.</b> Condition 6.2 of the Licence stipulates that sampling and analysis of all pollutants as well as reference measurement methods to calibrate automated measurement systems shall be carried out in accordance with CEN-standards. Condition 6.4 requires that monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
<b>BAT 54</b>	BAT is to identify the main chemical constituents of the treated effluent and to then make an informed assessment of the fate of these chemicals in the environment.	Applicable	<b>In place.</b> Schedule B.4 of the licence specifies emission limit values for the emissions to sewer (SE 1). Schedule C.2.2 of the Waste Licence specifies the parameters that must be monitored in the stormwater emissions (SW 1). The objective is to ensure the discharges do not impact on Youghal Harbour.
<b>BAT 55</b>	BAT is to only discharge the wastewater from its storage after the conclusion of all the treatment measures and a subsequent final inspection.	Applicable	<b>In place.</b> Through various conditions of the existing Licence.
<b>BAT 56</b>	BAT is to achieve the following water emission values (ppm) COD 20 – 120 BOD 2 – 20 Heavy metals (Cr, Cu, Ni, Pb, Zn) 0.1 – 1 Highly toxic heavy metals: As <0.1 Hg 0.01 – 0.05 Cd <0.1 – 0.2 Cr(VI) <0.1 – 0.4	Applicable	<b>In place.</b> The emission limit values in the Licence apply to emissions to sewer. The Licence specifies the following: COD = 125 mg/l BOD = 20 mg/l Heavy Metals Total – N/A  Arsenic = 0.02 mg/l Mercury = N/A Cadmium = 0.005 mg/l Chromium = 0.015 mg/l
	<i>Management of Process Related Residues</i>		
<b>BAT 57</b>	BAT is to have a residue management plan as part of the EMS including a) basic housekeeping techniques and b) internal benchmarking techniques.	Applicable	<b>In place.</b> ERAS ECO Ltd has procedures to manage waste arising from site activities, which include canteen and office waste and waste oils.
<b>BAT 58</b>	BAT is to maximise the use of re-usable packaging (drums, containers, IBCs,	Applicable	<b>In place.</b>

	palettes, etc.).		
<b>BAT 59</b>	BAT is to re-use drums when they are in a good working state. In other cases, they are to be sent for appropriate treatment	Applicable	<b>In place.</b> The drums that contain the oils used in the maintenance of the plant and equipment are returned to the suppliers.
<b>BAT 60</b>	BAT is to keep a monitoring inventory of the waste on-site by using records of the amount of wastes received on-site and records of the wastes processed.	Applicable	<b>In place.</b> Conditions 11.10 and 11.11 of the Licence requires ERAS ECO Ltd to keep written records of each load of waste arriving at and / or departing from the facility.
<b>BAT 61</b>	BAT is to re-use the waste from one activity/treatment possibly as a feedstock for another.	Applicable	<b>In place.</b> Dry recyclable waste is bulked up and sent for offsite heat recovery, while sludge is stabilised and/or dried and sent offsite for heat recovery or landspreading.
	<i>Soil Contamination</i>		
<b>BAT 62</b>	BAT is to provide and then maintain the surfaces of operational areas, including applying measures to prevent or quickly clear away leaks and spillages, and ensuring that maintenance of drainage systems and other subsurface structures is carried out.	Applicable	<b>In place.</b> Condition 8.5 requires that the loading and unloading of waste material shall be carried out in designated areas protected against spillage and leachate run-off.  Any quarantined waste, while awaiting transfer off-site, shall be stored in designated waste quarantine areas, which shall be protected against spillage and leachate run-off.
<b>BAT 63</b>	BAT is to utilise an impermeable base and internal site drainage.	Applicable	<b>In place (Refer to BAT 62).</b>
<b>BAT 64</b>	BAT is to reduce the installation site and minimise the use of underground vessels and pipework.	Applicable	<b>In place.</b> Apart from the silt traps, interceptor, attenuation tank and pump sumps on the surface water drainage system and the Purifo treatment system sump there are no underground storage tanks at the installation.
<b>BAT 65</b>	Techniques for handling and storage in biological treatments		
<b>a)</b>	BAT for less odour-intensive wastes, use automated and rapid action doors (opening times of the doors being kept to a minimum) in combination with an appropriate exhaust air collection device resulting in an under pressure in the hall.	Applicable	<b>In place / Proposed.</b> Separate odour abatement and negative air pressure systems are and will be employed on-site to minimise offsite odours.

<b>b)</b>	BAT for highly odour-intensive wastes, use closed feed bunkers constructed with a vehicle sluice	Applicable	<b>In place.</b> The buildings are under negative air pressure, meaning all odours are maintained within the buildings.
<b>c)</b>	BAT is to house and equip the bunker area with an exhaust air collection device.	Applicable	Bunker not provided, but refer to BAT 66 b).
<b>BAT 66</b>	BAT is to adjust the admissible waste types and separation processes according to the type of process carried out and the abatement technique applicable	Applicable	<b>In place.</b> The installation houses sludge drying, municipal waste stream processing and AD activities. The type of treatment applied to the incoming materials depends on the nature of the wastes.
<b>BAT 67</b>	Anaerobic Digestion	Applicable	
<b>b)</b>	BAT is to recycle the maximum amount of waste water to the reactor.	Applicable	<b>Proposed.</b> The proposed AD process will return wastewater to the start of the process or it will be sent for onsite treatment in the WWTP.
<b>c)</b>	BAT is to operate the system under thermophilic digestion conditions. For certain types of wastes, thermophilic conditions cannot to be reached	Not Applicable	There will be multiple substrate inputs to the AD process and thermophilic digestion is too unstable to use for the treatment of multiple inputs. Mesophilic digestion is the optimum process for this type of treatment.
<b>d)</b>	BAT is to measure TOC, COD, N, P and Cl levels in the inlet and outlet flows. When a better control of the process is required, or a better quality of the waste OUT, more parameters are necessary for measuring and controlling.	Applicable	<b>Proposed.</b> Output will be tested regularly for nutrient management plan purposes.
<b>e)</b>	BAT is to maximise the production of biogas. This technique needs to consider the effect on the digestate and biogas quality.	Applicable	<b>Proposed.</b> CHP plant to be installed for energy recovery.

<b>BAT 68</b>	<p>BAT is to reduce the air emissions of the exhaust gas when using biogas as a fuel by restricting the emissions of dust, NOx, SOx, CO, H2S and VOC by using an appropriate combination of the following techniques</p> <ul style="list-style-type: none"> <li>a. scrubbing the biogas with iron salts</li> <li>b. using de-NOx techniques, such as SCR</li> <li>c. using a thermal oxidation unit</li> <li>d. using activated carbon filtration.</li> </ul>	Applicable	<b>Proposed.</b> Air abatement system to be installed to treat biogases prior to CHP plant and or gas grid.
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<b>Title of Document Energy Efficiency (2009)</b>			
		<b>Applicability</b>	<b>In place / Proposed</b>
<b>BAT 1</b>	BAT is to implement and adhere to an energy efficiency management system (ENEMS) appropriate to the local circumstances.	Applicable	<b>In place</b>
<b>BAT 2</b>	BAT is to continuously minimise the environmental impact of an installation by planning actions and investments on an integrated basis and for the short, medium and long term, considering the cost-benefits and cross-media effects.	Applicable	<b>In place.</b>
<b>BAT 3</b>	BAT is to identify the aspects of an installation that influence energy efficiency by carrying out an audit. It is important that an audit is coherent with a systems approach (see BAT 7).	Applicable	<b>In place/Proposed.</b> ERAS ECO Ltd last conducted an energy audit at the installation in 2008.
<b>BAT 4</b>	<i>When carrying out an audit, BAT is to ensure that the audit identifies the following aspects;</i>	Applicable	<b>In place/Proposed.</b> Refer to BAT 3.
<b>a)</b>	energy use and type in the installation and its component systems and processes.		
<b>b)</b>	energy-using equipment, and the type and quantity of energy used in the installation.		
<b>c)</b>	possibilities to minimise energy use, such as: <ul style="list-style-type: none"> <li>controlling/reducing operating times, e.g. switching off when not in use (e.g.</li> <li>ensuring insulation is optimised,</li> <li>optimising utilities, associated systems, processes and equipment).</li> </ul>		
<b>d)</b>	possibilities to use alternative sources or		

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		<b>Applicability</b>	<b>In place / Proposed</b>
	use of energy that is more efficient, in particular energy surplus from other processes and/or systems.		
<b>e)</b>	possibilities to apply energy surplus to other processes and/or systems.		
<b>f)</b>	possibilities to upgrade heat quality.		
<b>BAT 5</b>	BAT is to use appropriate tools or methodologies to assist with identifying and quantifying energy optimisation.	Applicable	<b>In place/Proposed.</b> The previous energy audit and future audits will follow best practice.
<b>BAT 6</b>	BAT is to identify opportunities to optimise energy recovery within the installation, between systems within the installation (see BAT 7) and/or with a third party.	Applicable	<b>In place.</b> The energy audit identified actions that have the potential to optimise energy recovery.
<b>BAT 7</b>	<p>BAT is to optimise energy efficiency by taking a systems approach to energy management in the installation. Systems to be considered as a whole include:</p> <p>process units</p> <p>heating systems such as:</p> <ul style="list-style-type: none"> <li>steam</li> <li>hot water</li> </ul> <p>cooling and vacuum</p> <p>motor driven systems such as:</p> <ul style="list-style-type: none"> <li>compressed air</li> <li>pumping</li> </ul> <p>lighting</p> <p>drying, separation and concentration</p>	Applicable	<b>In place.</b> The energy audit identified the energy systems that were in place at the time.
<b>BAT 8</b>	<i>BAT is to establish energy efficiency indicators by carrying out all of the</i>	Applicable	<b>In Place/Proposed.</b> The energy audit identified the existing indicators of energy efficiency. It will be an objective of the next audit to identify the

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	<i>following</i>		boundaries associated with the indicators and installation specific causes of variation in efficiencies.
a)	Identifying suitable energy efficiency indicators for the installation, and where necessary, individual processes, systems and/or units, and measure their change over time or after the implementation of energy efficiency measures.		
b)	Identifying and recording appropriate boundaries associated with the indicators.		
c)	Identifying and recording factors that can cause variation in the energy efficiency of the relevant process, systems and/or units.		
<b>BAT 9</b>	BAT is to carry out systematic and regular comparisons with sector, national or regional benchmarks, where validated data are available.	Applicable	<b>In place</b>
<b>BAT 10</b>	<i>BAT is to optimise energy efficiency when planning a new installation, unit or system or a significant upgrade by considering all of the following</i>	Applicable	<b>In place.</b> EED is central to all new equipment procurement/upgrade. ERAS ECO Ltd will obtain High Efficiency Certificates from the Commission for Energy Regulation for the new CHP Plant when operational.
a)	The energy efficient design (EED) should be initiated at the early stages of the conceptual design/basic design phase, even though the planned investments may not be well-defined. The EED should also be taken into account in the tendering process.		
b)	The development and/or selection of energy efficient technologies.		

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c)	Additional data collection may need to be carried out as part of the design project or separately to supplement existing data or fill gaps in knowledge.		
d)	The EED work should be carried out by an energy expert.		.
e)	The initial mapping of energy consumption should also address which parties in the project organisations influence the future energy consumption, and should optimise the energy efficiency design of the future plant with them. For example, the staff in the (existing) installation who may be responsible for specifying design parameters.		
<b>BAT 11</b>	BAT is to seek to optimise the use of energy between more than one process or system within the installation or with a third party.	Not Applicable	Given the nature of the energy systems at the installation there is no opportunity to optimise the use of energy between systems or with third parties. However, there will be an opportunity to sell excess electricity generated from the CHP plant and or methane to the National Grid.
<b>BAT 12</b>	BAT is to maintain the impetus of the energy efficiency programme by using a variety of techniques.	Applicable	<b>Proposed:</b> The energy audit report will include recommendation on ensuring energy efficiency programmes are maintained.
<b>BAT 13</b>	<i>BAT is to maintain expertise in energy efficiency and energy-using systems by using techniques such as:</i>	Applicable	<b>In Place</b>
a)	Recruitment of skilled staff and/or training of staff. Training can be delivered by in-house staff, by external experts, by formal courses or by self-study/development.		
b)	Taking staff off-line periodically to perform fixed term/specific investigations (in their original installation or in others.		

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		<b>Applicability</b>	<b>In place / Proposed</b>
<b>c)</b>	Sharing in-house resources between sites.		
<b>d)</b>	Use of appropriately skilled consultants for fixed term investigations.		
<b>e)</b>	Outsourcing specialist systems and/or functions		
<b>BAT 14</b>	<i>BAT is to ensure that the effective control of processes is implemented by techniques such as:</i>	Applicable	<b>In Place.</b> ERAS ECO Ltd has a SCADA system that monitors key performance parameters and records these.
<b>a)</b>	Having systems in place to ensure that procedures are known, understood and complied with.		
<b>b)</b>	Ensuring that the key performance parameters are identified, optimised for energy efficiency and monitored.		
<b>c)</b>	Documenting or recording these parameters.		
<b>BAT 15</b>	<i>BAT is to carry out maintenance at installations to optimise energy efficiency by applying all of the following:</i>	Applicable	<b>In Place/Proposed.</b> ERAS ECO Ltd has a preventative maintenance programme in place.
<b>a)</b>	Clearly allocating responsibility for the planning and execution of maintenance.		
<b>b)</b>	Establishing a structured programme for maintenance based on technical descriptions of the equipment, norms, etc. as well as any equipment failures and consequences. Some maintenance activities may be best scheduled for plant shutdown periods.		
<b>c)</b>	Supporting the maintenance programme by appropriate record keeping systems and diagnostic testing.		
<b>d)</b>	Identifying from routine maintenance, breakdowns and/or abnormalities possible losses in energy efficiency, or		

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		<b>Applicability</b>	<b>In place / Proposed</b>
	where energy efficiency could be improved.		
<b>e)</b>	Identifying leaks, broken equipment, worn bearings, etc. that affect or control energy usage, and rectifying them at the earliest opportunity.		
<b>BAT 16</b>	BAT is to establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of operations and activities that can have a significant impact on energy efficiency.	Applicable	<b>In Place/Proposed.</b> ERAS ECO Ltd has a SCADA system that monitors key performance parameters and records these. ERAS ECO Ltd will prepare an Energy and Resource Management Procedure, which will take into account the need to monitor and measure all of the key characteristics of the installation's activities that have a significant impact on energy efficiency. These characteristics will be identified in the report on the next energy audit (Ref BAT 3).
<b>BAT 17</b>	Combustion.	Applicable	<b>In Place</b>
<b>BAT 18</b>	Steam Systems.	Not Applicable	No steam systems at the installation.
<b>BAT19</b>	Heat Recovery.	Applicable	<b>Proposed.</b> ERAS ECO Ltd will adopt a usage programme for the heat from the proposed new CHP plant.
<b>BAT 20</b>	Cogeneration.	Not Applicable?	No cogeneration systems at the installation
<b>BAT 21</b>	BAT is to increase the power factor according to the requirements of the local electricity distributor by using techniques such as those in Table 4.3, according to applicability.	Applicable	<b>In Place/Proposed.</b> Power factor correction has been applied at the existing plant.
<b>BAT 22</b>	BAT is to check the power supply for harmonics and apply filters, if required.	Applicable	<b>Proposed.</b> ERAS ECO Ltd will engage an electrical engineer to review energy management systems at the installation, which will address the efficiency of electric motors.
<b>BAT 23</b>	BAT is to optimise the power supply efficiency by using techniques such as those in Table 4.4, according to applicability.	Applicable	<b>Proposed.</b> ERAS ECO Ltd will engage an electrical engineer to review energy management systems at the installation, which will address the efficiency of electric motors.
<b>BAT 24</b>	<i>BAT is to optimise electric motors in the</i>	Applicable	<b>Proposed.</b> ERAS ECO Ltd will engage an electrical engineer to review energy

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		Applicability	In place / Proposed
	<i>following order;</i>		management systems at the installation, which will address the efficiency of electric motors.
1	Optimise the entire system the motor(s) is part of.		
2	Optimise the motor(s) in the system according to the newly-determined load requirements, by applying one or more of the techniques in Table 4.5,		
3	When the energy-using systems have been optimised, then optimise the remaining (non-optimised) motors according to Table 4.5.		
<b>BAT 25</b>	BAT is to optimise compressed air systems (CAS) using the techniques such as those in Table 4.6, according to applicability.	Not Applicable	
<b>BAT 26</b>	BAT is to optimise pumping systems by using the techniques in Table 4.7, according to applicability.	Applicable	<b>Proposed.</b> The proposed pumps in the AD plant will be assessed to identify opportunities for optimisation.
<b>BAT 27</b>	Heating, Ventilation and Air Conditioning	Not Applicable	No HVAC system at the installation.
<b>BAT 28</b>	BAT is to optimise artificial lighting systems by using the techniques such as those in Table 4.9 according to applicability.	Applicable	<b>In place.</b> The energy audit assessed energy usage in the lighting system.
<b>BAT 29</b>	Drying, Separation and Concentration.	Applicable	<b>In place.</b> The sludge drying system was assessed in the energy audit.

## Conclusions on BAT from the Emissions from Storage BAT Reference Document

### READ ME:

The 'Conclusions on BAT from the Emissions from Storage BAT Reference Document' is a horizontal BREF as it addresses the storage and the transfer/handling of liquids, liquefied gases and solids regardless of the sector or industry.

In this case, you are required to identify the Conclusions on BAT relevant to your installation. Please use the '**Scope**' box to describe the relevant activities/processes that come within the scope of this BREF and clearly identify the Conclusions on BAT (sections and subsections) that are '**Not Applicable**'.

For each applicable BAT, in the following table, state the status; '**Yes**' or '**Will be**' as appropriate in the '**State whether it is in place or state schedule for implementation**' box. The use of each of these terms is described below.

Information on compliance in the '**Applicability Assessment**' box should include, where applicable, the following:

- (i) Identification of the relevant process/ activity or individual emission points that the BAT requirement applies to at your installation.
- (ii) Where BAT is to use one or a combination of listed techniques, specify the technique(s) implemented/proposed at your installation to achieve the BAT; and
- (iii) A comment on how the requirements are being met or will be met, e.g., a description of the technology/operational controls/management proposed to meet the requirements.

Use of terms:

- (a) '**Yes**' – To be entered where the installation is currently compliant with this BAT requirement.
- (b) '**Will be**' – To be entered where a further technique is required to be installed to achieve compliance with the BAT requirement. In this case you must also specify the date by which the installation will comply with the BAT Conclusion requirement.

Please refer to the EPA BAT Guidance Note(s) for BAT associated emission levels. EPA BAT Guidance Notes are the reference for setting emission limit values (without prejudice to the requirements of environmental quality standards).

BAT Guidance Notes are available on the EPA website.

## Conclusions on BAT from the Emissions from Storage BAT Reference Document (extracts)

The full and complete Emissions from Storage BAT reference document (July 2006) is available at the EIPPC Bureau website:

<http://eippcb.jrc.ec.europa.eu/reference/>

### SCOPE

*Identify here the particular processes and activities at the installation that come within the scope of the conclusions on BAT from the Emissions from Storage BAT reference documents (BREF).*

Conclusions on BAT	Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
<b>5.1 Storage of liquids and Liquefied gases</b> <b>5.1.1.1 General principles to prevent and reduce emissions</b>		
<b>BAT 1.</b> BAT for a proper design is to take into account at least the following: <ul style="list-style-type: none"> <li>• the physico-chemical properties of the substance being stored</li> <li>• how the storage is operated, what level of instrumentation is needed, how many operators are required, and what their workload will be</li> <li>• how the operators are informed of deviations from normal process conditions (alarms)</li> <li>• how the storage is protected against deviations from normal process conditions (safety instructions, interlock systems, pressure relief devices, leak detection and containment, etc.)</li> <li>• what equipment has to be installed, largely taking account of past experiences of the product (construction materials, valve quality, etc.)</li> </ul>	Applicable	In Place

<ul style="list-style-type: none"> <li>• which maintenance and inspection plan needs to be implemented and how to ease the maintenance and inspection work (access, layout, etc.)</li> <li>• how to deal with emergency situations (distances to other tanks, facilities and to the boundary, fire protection, access for emergency services such as the fire brigade, etc.).</li> </ul>		
<p><b>BAT 2.</b> BAT is to apply a tool to determine proactive maintenance plans and to develop risk-based inspection plans such as the risk and reliability based maintenance approach; see Section 4.1.2.2.1.</p>	Applicable	In Place
<p><b>BAT3.</b> BAT is to locate a tank operating at, or close to, atmospheric pressure aboveground. However, for storing flammable liquids on a site with restricted space, underground tanks can also be considered. For liquefied gases, underground, mounded storage or spheres can be considered, depending on the storage volume.</p>	Applicable	In Place
<p><b>BAT 4.</b> BAT is to apply either a tank colour with a reflectivity of thermal or light radiation of at least 70 %, or a solar shield on aboveground tanks which contain volatile substances, see Section 4.1.3.6 or 4.1.3.7 respectively.</p>	Not Applicable-VOC not stored in tanks at the site.	
<p><b>BAT 5.</b> BAT is to abate emissions from tank storage, transfer and handling that have a significant negative environmental effect, as described in Section 4.1.3.1</p>	Applicable	In Place
<p><b>BAT 6.</b> On sites where significant VOC emissions are to be expected, BAT includes calculating the VOC emissions regularly.</p>	Not Applicable-VOC not stored in tanks at the site.	
<p><b>BAT 7.</b> BAT is to apply dedicated systems; see Section 4.1.4.4.</p>	Applicable	In Place
<p><b>5.1.1.2 Tank specific considerations</b></p>		
<p><i>Open top tanks</i> <b>BAT 8.</b> If emissions to air occur, BAT is to cover the tank by applying:</p> <ul style="list-style-type: none"> <li>• a floating cover, see Section 4.1.3.2</li> <li>• a flexible or tent cover, see Section 4.1.3.3, or</li> </ul>	Not Applicable-No open top tanks at the site.	

<ul style="list-style-type: none"> <li>• a rigid cover, see Section 4.1.3.4.</li> </ul> <p>Additionally, with an open top tank covered with a flexible, tent or a rigid cover, a vapour treatment installation can be applied to achieve an additional emission reduction, see Section 4.1.3.15. The type of cover and the necessity for applying the vapour treatment system depend on the substances stored and must be decided on a case-by-case basis.</p>		
<p><b>BAT 9.</b> To prevent deposition that would call for an additional cleaning step, BAT is to mix the stored substance (e.g. slurry), see Section 4.1.5.1.</p>	<p>Not Applicable-Tank cleaning is not required</p>	
<p><i>External floating roof tank</i> <b>BAT 10.</b> The BAT associated emission reduction level for a large tank is at least 97 % (compared to a fixed roof tank without measures), which can be achieved when over at least 95 % of the circumference the gap between the roof and the wall is less than 3.2 mm and the seals are liquid mounted, mechanical shoe seals.</p>	<p>Not Applicable-No floating roof tanks at the site.</p>	
<p><b>BAT 11.</b> BAT is to apply direct contact floating roofs (double-deck), however, existing non-contact floating roofs (pontoon) are also BAT. See Section 3.1.2. A dome can be BAT for adverse weather conditions, such as high winds, rain or snowfall. See Section 4.1.3.5.</p>	<p>Not Applicable-No floating roof tanks at the site.</p>	
<p><b>BAT 12.</b> For liquids containing a high level of particles (e.g. crude oil), BAT is to mix the stored substance to prevent deposition that would call for an additional cleaning step, see Section 4.1.5.1.</p>	<p>Not Applicable-Tank cleaning is not required</p>	
<p><i>Fixed roof tanks</i> <b>BAT 13.</b> For the storage of volatile substances which are toxic (T), very toxic (T+), or carcinogenic, mutagenic and reproductive toxic (CMR) categories 1 and 2 in a fixed roof tank, BAT is to apply a vapour treatment installation.</p>	<p>Not Applicable . Volatile substances which are toxic (T), very toxic (T+), or carcinogenic, mutagenic and reproductive toxic (CMR) categories 1 and 2 are not stored in a fixed roof tank.</p>	
<p><b>BAT 14.</b> For other substances, BAT is to apply a vapour treatment installation, or to install an internal floating roof (see Sections 4.1.3.15 and 4.1.3.10 respectively). Direct contact floating roofs and non-contact floating roofs are BAT.</p>	<p>Not Applicable for the substances stored in tanks at the site.</p>	



<p><b>BAT 15.</b> For tanks &lt; 50 m<sup>3</sup>, BAT is to apply a pressure relief valve set at the highest possible value consistent with the tank design criteria.</p>	<p>Applicable</p>	<p>Will be provided on digesters</p>
<p><b>BAT 16.</b> For liquids containing a high level of particles (e.g. crude oil) BAT is to mix the stored substance to prevent deposition that would call for an additional cleaning step, see Section 4.1.5.1.</p>	<p>Not Applicable, as tank cleaning not required</p>	
<p><b>Atmospheric horizontal tanks</b> <b>BAT 17.</b> For the storage of volatile substances which are toxic (T), very toxic (T+), or CMR categories 1 and 2 in an atmospheric horizontal tank, BAT is to apply a vapour treatment installation.</p>	<p>Not Applicable as there are no atmospheric horizontal tanks at the site.</p>	
<p><b>BAT 18.</b> For other substances, BAT is to do all, or a combination, of the following techniques depending on the substances stored:</p> <ul style="list-style-type: none"> <li>• apply pressure vacuum relief valves; see Section 4.1.3.11</li> <li>• up rate to 56 mbar; see Section 4.1.3.11</li> <li>• apply vapour balancing; see Section 4.1.3.13</li> <li>• apply a vapour holding tank, see Section 4.1.3.14, or</li> <li>• apply vapour treatment; see Section 4.1.3.15.</li> </ul> <p>The selection of the vapour treatment technology has to be decided on a case-by-case basis.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>Pressurised storage</b> <b>BAT 19.</b> BAT for draining depends on the tank type, but may be the application of a closed drain system connected to a vapour treatment installation, see Section 4.1.4. The selection of the vapour treatment technology has to be decided on a case-by-case basis.</p>	<p>Not Applicable. No liquid pressurised storage tanks at the site.</p>	
<p><b>Lifter roof tanks</b> <b>BAT 20.</b> For emissions to air, BAT is to (see Sections 3.1.9 and 4.1.3.14):</p> <ul style="list-style-type: none"> <li>• apply a flexible diaphragm tank equipped with pressure/vacuum relief valves, or</li> <li>• apply a lifter roof tank equipped with pressure/vacuum relief valves and connected</li> </ul>	<p>Not Applicable. No lifter roof tanks at the site.</p>	

<p>to a vapour treatment installation. The selection of the vapour treatment technology has to be decided on a case-by-case basis.</p>		
<p><b>Underground and mounded tanks</b> <b>BAT 21.</b> For the storage of volatile substances which are toxic (T), very toxic (T+), or CMR categories 1 and 2 in an underground or mounded tank, BAT is to apply a vapour treatment installation.</p>	<p>Not Applicable. Volatile substances which are toxic (T), very toxic (T+), or carcinogenic, mutagenic and reproductive toxic (CMR) categories 1 and 2 are not stored in an underground tank.</p>	
<p><b>BAT 22.</b> For other substances, BAT is to do all, or a combination, of the following techniques, depending on the substances stored:  <ul style="list-style-type: none"> <li>• apply pressure vacuum relief valves; see Section 4.1.3.11</li> <li>• apply vapour balancing; see Section 4.1.3.13</li> <li>• apply a vapour holding tank, see Section 4.1.3.14, or</li> <li>• apply vapour treatment; see Section 4.1.3.15.</li> </ul> The selection of the vapour treatment technology has to be decided on a case-by-case basis.</p>	<p>Not Applicable. No underground storage tanks for raw materials/intermediates/products on site.</p>	
<p><b>5.1.1.3 Preventing incidents and (major) accidents</b></p>		
<p><b>BAT 23.</b> BAT in preventing incidents and accidents is to apply a safety management system as described in Section 4.1.6.1.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 24.</b> BAT is to implement and follow adequate organisational measures and to enable training and instruction of employees for safe and responsible operation of the installation as described in Section 4.1.6.1.1.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 25.</b> BAT is to prevent corrosion by:  <ul style="list-style-type: none"> <li>• selecting construction material that is resistant to the product stored</li> <li>• applying proper construction methods</li> <li>• preventing rainwater or groundwater entering the tank and if necessary, removing water that has accumulated in the tank</li> <li>• applying rainwater management to bund drainage</li> </ul> </p>	<p>Applicable</p>	<p>In Place</p>

<ul style="list-style-type: none"> <li>• applying preventive maintenance, and</li> <li>• where applicable, adding corrosion inhibitors, or applying cathodic protection on the inside of the tank.</li> </ul>		
<p><b>BAT 26.</b> Additionally for an underground tank, BAT is to apply to the outside of the tank:</p> <ul style="list-style-type: none"> <li>• a corrosion-resistant coating</li> <li>• plating, and/or</li> <li>• a cathodic protection system.</li> </ul>	Not Applicable. No underground storage tanks for raw materials/intermediates/products on site.	
<p><b>BAT 27.</b> BAT is to prevent stress corrosion cracking (SCC) by:</p> <ul style="list-style-type: none"> <li>• stress relieving by post-weld heat treatment, see Section 4.1.6.1.4, and</li> <li>• applying a risk based inspection as described in Section 4.1.2.2.1.</li> </ul>	Applicable	In Place
<p><b>BAT 28.</b> BAT is to implement and maintain operational procedures – e.g. by means of a management system – as described in Section 4.1.6.1.5, to ensure that:</p> <ul style="list-style-type: none"> <li>• high level or high pressure instrumentation with alarm settings and/or auto closing of valves is installed</li> <li>• proper operating instructions are applied to prevent overfill during a tank filling operation, and</li> <li>• sufficient ullage is available to receive a batch filling.</li> </ul>	Applicable	In Place.
<p><b>BAT 29.</b> BAT is to apply leak detection on storage tanks containing liquids that can potentially cause soil pollution.</p>	Applicable	In Place
<p><b>BAT 30.</b> BAT is to achieve a ‘negligible risk level’ of soil pollution from bottom and bottom-wall connections of aboveground storage tanks. However, on a case-by-case basis, situations might be identified where an ‘acceptable risk level’ is sufficient.</p>	Applicable	In Place
<p><b>BAT 31.</b> BAT for aboveground tanks containing flammable liquids or liquids that pose a risk for significant soil pollution or a significant pollution of adjacent watercourses is to provide secondary containment, such as:</p> <ul style="list-style-type: none"> <li>• tank bunds around single wall tanks; see Section 4.1.6.1.11</li> <li>• double wall tanks; see Section 4.1.6.1.13</li> </ul>	Applicable	In Place

<ul style="list-style-type: none"> <li>• cup-tanks; see Section 4.1.6.1.14</li> <li>• double wall tanks with monitored bottom discharge; see Section 4.1.6.1.15.</li> </ul>		
<p><b>BAT 32.</b> For building new single walled tanks containing liquids that pose a risk for significant soil pollution or a significant pollution of adjacent watercourses, BAT is to apply a full, impervious, barrier in the bund, see Section 4.1.6.1.10.</p>	Applicable	In Place
<p><b>BAT 33.</b> For existing tanks within a bund, BAT is to apply a risk-based approach, considering the significance of risk from product spillage to the soil, to determine if and which barrier is best applicable. This risk-based approach can also be applied to determine if a partial impervious barrier in a tank bund is sufficient or if the whole bund needs to be equipped with an impervious barrier. See Section 4.1.6.1.11.</p>	Applicable	In Place
<p><b>BAT 34.</b> For chlorinated hydrocarbon solvents (CHC) in single walled tanks, BAT is to apply CHC-proof laminates to concrete barriers (and containments), based on phenolic or furan resins. One form of epoxy resin is also CHC-proof. See Section 4.1.6.1.12.</p>	Not Applicable as CHC are not used at the site.	
<p><b>BAT 35.</b> BAT for underground and mounded tanks containing products that can potentially cause soil pollution is to:</p> <ul style="list-style-type: none"> <li>• apply a double walled tank with leak detection, see Section 4.1.6.1.16, or</li> <li>• to apply a single walled tank with secondary containment and leak detection, see Section 4.1.6.1.17.</li> </ul>	Not Applicable-No underground product storage tanks.	
<p><b>BAT 36.</b> For toxic, carcinogenic or other hazardous substances, BAT is to apply full containment.</p>	Applicable	In Place
<b>5.1.2. Storage of packaged dangerous substances</b>		
<p><b>BAT 37.</b> BAT in preventing incidents and accidents is to apply a safety management system as described in Sections 4.1.6.1. The minimum level of BAT is to assess the risks of accidents and incidents on the site using the five steps described in Section 4.1.6.1</p>	Not Applicable. Packaged dangerous substances not stored at the site.	
<p><b>BAT 38.</b></p>	Not Applicable. Packaged dangerous	

BAT is to appoint a person or persons who is or are responsible for the operation of the store.	substances not stored at the site.	
<b>BAT 39.</b> BAT is to provide the responsible person(s) with specific training and retraining in emergency procedures as described in Section 4.1.7.1 and to inform other staff on the site of the risks of storing packaged dangerous substances and the precautions necessary to safely store substances that have different hazards.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 40.</b> BAT is to apply a storage building and/or an outdoor storage area covered with a roof, as described in Section 4.1.7.2. For storing quantities of less than 2500 litres or kilograms dangerous substances, applying a storage cell as described in Section 4.1.7.2 is also BAT.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 41.</b> BAT is to separate the storage area or building of packaged dangerous substances from other storage, from ignition sources and from other buildings on- and off-site by applying a sufficient distance, sometimes in combination with fire-resistant walls.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 42.</b> BAT is to separate and/or segregate incompatible substances. For the compatible and incompatible combinations see Annex 8.3.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 43.</b> BAT is to install a liquid-tight reservoir according to Section 4.1.7.5 that can contain all or a part of the dangerous liquids stored above such a reservoir. The choice whether all or only a part of the leakage needs to be contained depends on the substances stored and on the location of the storage (e.g. in a water catchment area) and can only be decided on a case-by-case basis.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 44.</b> BAT is to install a liquid-tight extinguishant collecting provision in storage buildings and storage areas according to Section 4.1.7.5. The collecting capacity depends on the substances stored, the amount of substances stored, the type of package used and the applied fire-fighting system and can only be decided on a case-by-case basis.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>BAT 45.</b>	Not Applicable. Packaged dangerous	

BAT is to apply a suitable protection level of fire prevention and fire-fighting measures as described in Section 4.1.7.6. The appropriate protection level has to be decided on a case-by-case basis in agreement with the local fire brigade.	substances not stored at the site.	
<b>BAT 46.</b> BAT is to prevent ignition at source as described in Section 4.1.7.6.1.	Not Applicable. Packaged dangerous substances not stored at the site.	
<b>5.1.3 Basins and lagoons</b>		
<b>BAT 47.</b> Where emissions to air from normal operation are significant, e.g. with the storage of pig slurry, BAT is to cover basins and lagoons using one of the following options: <ul style="list-style-type: none"> <li>• a plastic cover; see Section 4.1.8.2</li> <li>• a floating cover; see Section 4.1.8.1, or</li> <li>• only small basins, a rigid cover; see Section 4.1.8.2.</li> </ul> Additionally, where a rigid cover is used, a vapour treatment installation can be applied to achieve an extra emission reduction, see Section 4.1.3.15. The need for and type of vapour treatment must be decided on a case-by-case basis.	Not Applicable. No basins or lagoons at the site.	
<b>BAT 48.</b> To prevent overflowing due to rainfall in situations where the basin or lagoon is not covered, BAT is to apply a sufficient freeboard, see Section 4.1.11.1.	Not Applicable. No basins or lagoons at the site.	
<b>BAT 49.</b> Where substances are stored in a basin or lagoon with a risk of soil contamination, BAT is to apply an impervious barrier. This can be a flexible membrane, a sufficient clay layer or concrete, see Section 4.1.9.1	Not Applicable. No basins or lagoons at the site.	
<b>5.2 Transfer and handling of liquids and liquefied gases</b>		
<b>5.2.1 General principles to prevent and reduce emissions</b>		
<b>BAT 50.</b> BAT is to apply a tool to determine proactive maintenance plans and to develop risk-based inspection plans such as, the risk and reliability based maintenance approach; see Section 4.1.2.2.1.	Applicable	In Place
<b>BAT 51.</b> For large storage facilities, according to the properties of the products stored, BAT is to apply a leak detection and repair programme. Focus needs to be on those situations most likely to cause emissions (such as gas/light liquid, under high pressure	Not applicable. Site is not a large storage facility.	

and/or temperature duties). See Section 4.2.1.3.		
<b>BAT 52.</b> BAT is to abate emissions from tank storage, transfer and handling that have a significant negative environmental effect, as described in Section 4.1.3.1.	Applicable	In Place
<b>BAT 53.</b> BAT in preventing incidents and accidents is to apply a safety management system as described in Section 4.1.6.1.	Applicable	In Place
<b>BAT 54.</b> BAT is to implement and follow adequate organisational measures and to enable the training and instruction of employees for safe and responsible operation of the installation as described in Section 4.1.6.1.1.	Applicable	In Place
<b>5.2.2 Considerations on transfer and handling techniques</b> <b>5.2.2.1 Piping</b>		
<b>BAT 55.</b> BAT is to apply aboveground closed piping in new situations, see Section 4.2.4.1. For existing underground piping it is BAT to apply a risk and reliability based maintenance approach as described in Section 4.1.2.2.1.	Applicable	In Place
<b>BAT 56.</b> BAT is to minimise the number of flanges by replacing them with welded connections, within the limitation of operational requirements for equipment maintenance or transfer system flexibility, see Section 4.2.2.1.	Applicable	In Place
<b>BAT 57.</b> BAT for bolted flange connections (see Section 4.2.2.2.) include: <ul style="list-style-type: none"> <li>• fitting blind flanges to infrequently used fittings to prevent accidental opening</li> <li>• using end caps or plugs on open-ended lines and not valves</li> <li>• ensuring gaskets are selected appropriate to the process application</li> <li>• ensuring the gasket is installed correctly</li> <li>• ensuring the flange joint is assembled and loaded correctly</li> <li>• where toxic, carcinogenic or other hazardous substances are transferred, fitting high integrity gaskets, such as spiral wound, kammprofile or ring joints.</li> </ul>	Applicable	In Place
<b>BAT 58.</b>	Applicable	In Place

<p>BAT is to prevent corrosion by:</p> <ul style="list-style-type: none"> <li>• selecting construction material that is resistant to the product</li> <li>• applying proper construction methods</li> <li>• applying preventive maintenance, and</li> <li>• where applicable, applying an internal coating or adding corrosion inhibitors.</li> </ul>		
<p><b>BAT 59.</b> To prevent the piping from external corrosion, BAT is to apply a one, two, or three layer coating system depending on the site-specific conditions (e.g. close to sea). Coating is normally not applied to plastic or stainless steel pipelines. See Section 4.2.3.2.</p>	Applicable	In Place
<b>5.2.2.2 Vapour treatment</b>		
<p><b>BAT 60.</b> BAT is to apply vapour balancing or treatment on significant emissions from the loading and unloading of volatile substances to (or from) trucks, barges and ships. The significance of the emission depends on the substance and the volume that is emitted, and has to be decided on a case-by-case basis. For more detail see Section 4.2.8.</p>	Not Applicable, as the volume of volatile substances stored on site is small.	
<b>5.2.2.3 Valves</b>		
<p><b>BAT 61.</b> BAT for valves include:</p> <ul style="list-style-type: none"> <li>• correct selection of the packing material and construction for the process application</li> <li>• with monitoring, focus on those valves most at risk (such as rising stem control valves in continual operation)</li> <li>• applying rotating control valves or variable speed pumps instead of rising stem control valves</li> <li>• where toxic, carcinogenic or other hazardous substances are involved, fit diaphragm, bellows, or double walled valves</li> <li>• route relief valves back into the transfer or storage system or to a vapour treatment system.</li> </ul>	Applicable	In Place
<b>5.2.2.4 Pumps and compressors</b>		



<p><b>BAT 62.</b> The following are some of the main factors which constitute BAT:</p> <ul style="list-style-type: none"> <li>• proper fixing of the pump or compressor unit to its base-plate or frame</li> <li>• having connecting pipe forces within producers' recommendations</li> <li>• proper design of suction pipework to minimise hydraulic imbalance</li> <li>• alignment of shaft and casing within producers' recommendations</li> <li>• alignment of driver/pump or compressor coupling within producers' recommendations when fitted</li> <li>• correct level of balance of rotating parts</li> <li>• effective priming of pumps and compressors prior to start-up</li> <li>• operation of the pump and compressor within producers' recommended performance range (The optimum performance is achieved at its best efficiency point.)</li> <li>• the level of net positive suction head available should always be in excess of the pump or compressor</li> <li>• regular monitoring and maintenance of both rotating equipment and seal systems, combined with a repair or replacement programme.</li> </ul>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 63.</b> BAT is to use the correct selection of pump and seal types for the process application, preferably pumps that are technologically designed to be tight such as canned motor pumps, magnetically coupled pumps, pumps with multiple mechanical seals and a quench or buffer system, pumps with multiple mechanical seals and seals dry to the atmosphere, diaphragm pumps or bellow pumps. For more details see Sections 3.2.2.2, 3.2.4.1 and 4.2.9.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 64.</b> BAT for compressors transferring non-toxic gases is to apply gas lubricated mechanical seals.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 65.</b> BAT for compressors, transferring toxic gases is to apply double seals with a liquid or gas barrier and to purge the process side of the containment seal with an inert buffer gas.</p>	<p>Applicable</p>	<p>In Place</p>

<p><b>BAT 66.</b> In very high pressure services, BAT is to apply a triple tandem seal system.</p>	<p>Not Applicable. No very high pressure services at the site.</p>	
<p><b>5.2.2.5 Sampling connections</b></p>		
<p><b>BAT 67.</b> BAT, for sample points for volatile products, is to apply a ram type sampling valve or a needle valve and a block valve. Where sampling lines require purging, BAT is to apply closed-loop sampling lines. See Section 4.2.9.14.</p>	<p>Not Applicable. No requirement to sample volatile products at the site.</p>	
<p><b>5.3 Storage of solids</b> <b>5.3.1 Open storage</b></p>		
<p><b>BAT 68.</b> BAT is to apply enclosed storage by using, for example, silos, bunkers, hoppers and containers, to eliminate the influence of wind and to prevent the formation of dust by wind as far as possible by primary measures. See Table 4.12 for these primary measures with cross-references to the relevant sections.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 69.</b> BAT for open storage is to carry out regular or continuous visual inspections to see if dust emissions occur and to check if preventive measures are in good working order. Following the weather forecast by, e.g. using meteorological instruments on site, will help to identify when the moistening of heaps is necessary and will prevent unnecessary use of resources for moistening the open storage. See Section 4.3.3.1.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 70.</b> BAT for long-term open storage are one, or a proper combination, of the following techniques:</p> <ul style="list-style-type: none"> <li>• moistening the surface using durable dust-binding substances, see Section 4.3.6.1</li> <li>• covering the surface, e.g. with tarpaulins, see Section 4.3.4.4</li> <li>• solidification of the surface, see Table 4.13</li> <li>• grassing-over of the surface, see Table 4.13.</li> </ul>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 71.</b> BAT for short-term open storage are one, or a proper combination, of the following techniques:</p> <ul style="list-style-type: none"> <li>• moistening the surface using durable dust-binding substances, see Section 4.3.6.1</li> <li>• moistening the surface with water, see Sections 4.3.6.1</li> </ul>	<p>Applicable</p>	<p>In Place</p>

<ul style="list-style-type: none"> <li>• covering the surface, e.g. with tarpaulins, see Section 4.3.4.4.</li> </ul>		
<b>5.3.2 Enclosed storage</b>		
<b>BAT 72.</b> BAT is to apply enclosed storage by using, for example, silos, bunkers, hoppers and containers. Where silos are not applicable, storage in sheds can be an alternative. This is, e.g. the case if apart from storage, the mixing of batches is needed.	Applicable.	In Place.
<b>BAT 73.</b> BAT for silos is to apply a proper design to provide stability and prevent the silo from collapsing. See Sections 4.3.4.1 and 4.3.4.5.	Not Applicable-No silos at the site.	
<b>BAT 74.</b> BAT for sheds is to apply proper designed ventilation and filtering systems and to keep the doors closed. See Section 4.3.4.2.	Applicable.	In Place.
<b>BAT 75</b> BAT is to apply dust abatement and a BAT associated emission level of 1 – 10 mg/m <sup>3</sup> depending on the nature/type of substance stored. The type of abatement technique has to be decided on a case-by-case basis. See Section 4.3.7.	Applicable in so far as it applies to the site and the dust deposition limits set in the current licence	In Place.
<b>BAT 76.</b> For a silo containing organic solids, BAT is to apply an explosion resistant silo (see Section 4.3.8.3), equipped with a relief valve that closes rapidly after the explosion to prevent oxygen entering the silo, as described in Section 4.3.8.4.	Not applicable-No silos at the site.	
<b>5.3.4 Preventing incidents and (major) accidents</b>		
<b>BAT 77.</b> BAT in preventing incidents and accidents is applying a safety management system as described in Section 4.1.7.1.	Applicable.	In Place.
<b>5.4 Transfer and handling of solids</b>		
<b>5.4.1 General approaches to minimise dust from transfer and handling</b>		
<b>BAT 78.</b> BAT is to prevent dust dispersion due to loading and unloading activities in the open air, by scheduling the transfer as much as possible when the wind speed is low. However, and taking into account the local situation, this type of measure cannot be	Applicable	In Place

generalised to the whole EU and to any situation irrespective of the possible high costs. See Section 4.4.3.1.		
<b>BAT 79.</b> When applying a mechanical shovel, BAT is to reduce the drop height and to choose the best position during discharging into a truck; see Section 4.4.3.4.	Applicable.	In Place.
<b>BAT 80.</b> BAT then is to adjust the speed of vehicles on-site to avoid or minimise dust being swirled up; see Section 4.4.3.5.2.	Applicable.	In Place.
<b>BAT 81.</b> BAT for roads that are used by trucks and cars only, is applying hard surfaces to the roads of, for example, concrete or asphalt, because these can be cleaned easily to avoid dust being swirled up by vehicles, see Section 4.4.3.5.3. However, applying hard surfaces to the roads is not justified when the roads are used just for big shovel vehicles or when a road is temporary.	Applicable.	In Place.
<b>BAT 82.</b> BAT is to clean roads that are fitted with hard surfaces according to Section 4.4.6.12.	Applicable.	In Place.
<b>BAT 83.</b> Cleaning of vehicle tyres is BAT. The frequency of cleaning and type of cleaning facility applied (see Section 4.4.6.13) has to be decided on a case-by-case basis.	Applicable.	In Place.
<b>BAT 84.</b> Where it neither compromises product quality, plant safety, nor water resources, BAT for loading/unloading drift sensitive, wettable products is to moisten the product as described in Sections 4.4.6.8, 4.4.6.9 and 4.3.6.1. Risk of freezing of the product, risk of slippery situations because of ice forming or wet product on the road and shortage of water are examples when this BAT might not be applicable.	Not Applicable-Drift sensitive products not loaded / unloaded at the site.	
<b>BAT 85.</b> For loading/unloading activities, BAT is to minimise the speed of descent and the free fall height of the product; see Sections 4.4.5.6 and 4.4.5.7 respectively. Minimising the speed of descent can be achieved by the following techniques that are BAT: <ul style="list-style-type: none"> <li>• installing baffles inside fill pipes</li> <li>• applying a loading head at the end of the pipe or tube to regulate the output speed</li> <li>• applying a cascade (e.g. cascade tube or hopper)</li> <li>• applying a minimum slope angle with, e.g. chutes.</li> </ul>	Not applicable-Not required for the types of waste accepted at the site.	

<p><b>BAT 86.</b> To minimise the free fall height of the product, the outlet of the discharger should reach down onto the bottom of the cargo space or onto the material already piled up. Loading techniques that can achieve this, and that are BAT, are:</p> <ul style="list-style-type: none"> <li>• height adjustable fill pipes</li> <li>• height adjustable fill tubes, and</li> <li>• height adjustable cascade tubes.</li> </ul> <p>These techniques are BAT, except when loading/unloading non drift sensitive products, for which the free fall height is not that critical.</p>	<p>Not Applicable-Site does not accept/produce drift sensitive products</p>	
<p><b>5.4.2 Considerations on transfer techniques</b></p>		
<p><b>BAT 87.</b> For applying a grab, BAT is to follow the decision diagram as shown in Section 4.4.3.2 and to leave the grab in the hopper for a sufficient time after the material discharge.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 88.</b> BAT for new grabs, is to apply grabs with the following properties (see Section 4.4.5.1):</p> <ul style="list-style-type: none"> <li>• geometric shape and optimal load capacity</li> <li>• the grab volume is always higher than the volume that is given by the grab curve</li> <li>• the surface is smooth to avoid material adhering, and</li> <li>• a good closure capacity during permanent operation.</li> </ul>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 89.</b> For all types of substances, BAT is to design conveyor to conveyor transfer chutes in such a way that spillage is reduced to a minimum. A modelling process is available to generate detail designs for new and existing transfer points. For more details see Section 4.4.5.5.</p>	<p>Applicable</p>	<p>In Place</p>
<p><b>BAT 90.</b> For non or very slightly drift sensitive products (S5) and moderately drift sensitive, wettable products (S4), BAT is to apply an open belt conveyor and additionally, depending on the local circumstances, one or a proper combination of the following techniques:</p> <ul style="list-style-type: none"> <li>• lateral wind protection, see Section 4.4.6.1</li> <li>• spraying water and jet spraying at the transfer points, see Sections 4.4.6.8 and 4.4.6.9, and/or</li> </ul>	<p>Applicable</p>	<p>In Place</p>

<ul style="list-style-type: none"> <li>• belt cleaning, see Section 4.4.6.10.</li> </ul>		
<p><b>BAT 91.</b>  For highly drift sensitive products (S1 and S2) and moderately drift sensitive, not wettable products (S3) BAT for new situations, is to:  apply closed conveyors, or types where the belt itself or a second belt locks the material (see Section 4.4.5.2), such as:</p> <ul style="list-style-type: none"> <li>• pneumatic conveyors</li> <li>• trough chain conveyors</li> <li>• screw conveyors</li> <li>• tube belt conveyor</li> <li>• loop belt conveyor</li> <li>• double belt conveyor</li> </ul> <p>or to apply enclosed conveyor belts without support pulleys (see Section 4.4.5.3), such as:</p> <ul style="list-style-type: none"> <li>• aerobelt conveyor</li> <li>• low friction conveyor</li> <li>• conveyor with diabolos.</li> </ul> <p>The type of conveyor depends on the substance to be transported and on the location and has to be decided on a case-by-case basis.</p>	<p>Not Applicable-Site does not accept/produce highly or moderately drift sensitive products</p>	
<p><b>BAT 92.</b>  For existing conventional conveyors, transporting highly drift sensitive products (S1 and S2) and moderately drift sensitive, not wettable products (S3), BAT is to apply housing; see Section 4.4.6.2. When applying an extraction system, BAT is to filter the outgoing air stream; see Section 4.4.6.4.</p>	<p>Not Applicable-Site does not accept/produce highly or moderately drift sensitive products</p>	
<p><b>BAT 93.</b>  To reduce energy consumption for conveyor belts (see Section 4.4.5.2), BAT is to apply:</p> <ul style="list-style-type: none"> <li>• a good conveyor design, including idlers and idler spacing</li> <li>• an accurate installation tolerance, and</li> <li>• a belt with low rolling resistance.</li> </ul>	<p>Applicable</p>	<p>In Place</p>