

Engreen Environmental Consultants Ltd.

Report Title: BAT Assessment

Client: Woolley Bros
(Wholesale Meats)
Limited– Rother
Valley Abattoir

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1 Introduction

1.1 Introduction

The tables below provide the Best Available Technique requirements for the operations covered by the variation application at the installation with details on how these are met. The BAT requirements have been taken from relevant guidance documents as specified below:

- Table 1.1: Environment Agency guidance, “The Red Meat Processing (Cattle, Sheep and Pigs) Sector” (EPR 6.12), March 2009;
- Table 1.2: EC’s “Reference Document on Best Available Techniques in the Slaughterhouse and Animal By-products Industries”, May 2005.

In relation to the guidance document, “How to comply with your Environmental Permit”, the requirements outlined in this document have been considered throughout all of the supporting documents submitted with this application.

1.2 BAT Assessment – EPR 6.12

This Section of the report only compares the site operations included as part of the variation against the BAT requirements as specified in EPR 6.12. The comparison has been undertaken by listing the relevant BAT requirements and detailing how site meets the criteria; the assessment is presented in Table 1.1 below. In addition, it is worth noting that the facility only slaughters cattle and therefore parts of EPR 6.12 relating to other species will not be relevant. Where BAT clauses are deemed not applicable, “N/A” has been inserted in the ‘Site Assessment’ column.

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|--|---|
| BAT No | BAT Description | Site Assessment |
| 1. Managing Activities | | |
| 1.1 Accident management – You should where appropriate: | | |
| 1 | Ensure that fat, oil and grease (FOG) does not block drains | Drains will be inspected as part of the infrastructure management plan that will form part of the existing Fugitive Emissions Monitoring Programme within the EMS. Cleaning procedures in place to minimise amount of FOG that could potentially enter drains. |
| 2 | Identify the major risks associated with the effluent treatment plant (ETP) and have procedures in place to minimise them. | N/A – No change as part of this variation application. |
| 3 | Ensure adequate containment of blood storage tanks. | N/A – No change as part of this variation application. |
| 1.2 Energy Efficiency – You should where appropriate: | | |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | | | | | |
|---|---|---|----------|---------------|----------|---|
| BAT No | BAT Description | Site Assessment | | | | |
| 1 | <p>Consider the following techniques to reduce energy consumption: in pig abattoirs, recovering useable heat from the exhaust from the singeing unit</p> <p>minimisation of water use. Typically about half of the total water usage at an abattoir is heated to between 40°C and 60°C. Heating this water requires substantial energy consumption, and adds a significant cost</p> <p>efficient operation of the refrigeration system – consider heat recovery from refrigeration system, reducing heat load, efficient operation on part load and fast closing doors/alarms on chilled storage areas.</p> | <p>N/A – cattle only abattoir.</p> <p>Water will be used efficiently within the process whilst ensuring compliance with food hygiene requirements. Individually supplied and heated knife sterilisers are used rather than a less efficient centralised hot water circulation system.</p> <p>Refrigeration systems will be maintained under contract.</p> | | | | |
| 2 | <p>Pig scalding</p> <p>If you operate a pig abattoir, you should consider using humidified air as the scalding process. Shower scalding has a very high water and energy consumption and is not BAT.</p> | N/A – cattle only abattoir. | | | | |
| 3 | <p>Pig singeing</p> <p>pig singeing ovens should be insulated, with automatic doors</p> <p>fuel consumption can be reduced by using solenoid switches to initiate the flame only when carcasses are passing through.</p> | N/A – cattle only abattoir. | | | | |
| 4 | <p>You should meet the energy benchmarks shown in Table 1:-</p> <p style="text-align: center;">Heat and electricity (kWh/animal)</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 40px;">90 kg pigs</td> <td>30 - 125</td> </tr> <tr> <td>250 kg cattle</td> <td>70 - 300</td> </tr> </table> | 90 kg pigs | 30 - 125 | 250 kg cattle | 70 - 300 | Energy benchmark complied with. Energy Benchmark reviewed on an annual basis as part of regulatory reporting. |
| 90 kg pigs | 30 - 125 | | | | | |
| 250 kg cattle | 70 - 300 | | | | | |
| 1.3 Efficient use of raw materials and water – You should where appropriate: | | | | | | |
| Water | | | | | | |
| 1 | Use recirculating systems to recycle water. (Once-through cooling systems should not be used.) | <p>Hot water ring main system in use.</p> <p>Individually supplied and heated knife sterilisers are used rather than a less efficient centralised steriliser hot water circulation system.</p> <p>Rainwater harvesting on site for use in housekeeping activities.</p> | | | | |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|---|---|--|
| BAT No | BAT Description | Site Assessment |
| 2 | Interlock chemical dosing pumps with cleaning operations, so that dosing does not continue after cleaning is complete | N / A |
| 3 | Meet the water consumption benchmarks in Table 2 below Cattle - 700 - 1000 litres per animal Pigs - 160 - 230 litres per animal Sheep - 100 – 150 litres per animal | Water consumption benchmark complied with. Water consumption Benchmark reviewed on an annual basis as part of regulatory reporting. Sheep and Pigs N/A as Cattle only abattoir. |
| Raw Materials | | |
| 1 | Monitor for leaks of refrigerant. | Systems will be maintained under contract and serviced regularly. Servicing will include leak detection in compliance with current Regulations |
| 2 | Ensure planned maintenance of the refrigeration system is carried out. | |
| 3 | Optimise dosing of disinfectants and detergents | N / A Cleaning chemicals currently used on site will not change. |
| 4 | Ensure that staff are trained in the handling, making up of working solutions and their application, in particular not setting the concentration of the chemical agent too high | All staff will be suitably trained. |
| 1.3 Avoidance, recovery and disposal of wastes – You should where appropriate: | | |
| 1 | Demonstrate that the chosen routes for recovery or disposal represent the best environmental option considering, but not limited to, the following: a. all avenues for recycling back into the process or reworking for another process b. composting c. animal feed (if allowed under animal by-product legislation) d. other commercial uses e. landspreading, but only under the following circumstances: you can demonstrate that it represents a genuine agricultural benefit or ecological improvement you have identified all the pollutants likely to be present. These may be substances from the process, from the materials of which your plant is constructed (e.g. reaching the waste by corrosion/erosion mechanisms), | Removal of waste and animal by-products will be in compliance with the requirements of the waste hierarchy and animal-by-products legislation. Details of any additional waste and ABP streams and their recovery destinations has been provided in P179-R02-F1. |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|--|---|
| BAT No | BAT Description | Site Assessment |
| | <p>from materials related to maintenance (e.g. detergent). You should consider all these possibilities, for both normal and abnormal operation of the plant. You should validate your conclusions by chemical analysis of the waste</p> <p>you have identified the ultimate fate of the substances in soil</p> <p>Note: un-processed meat scraps collected from screening equipment are not listed as a waste which can be exempted and therefore cannot be sent for application by landspreading.</p> | |
| 2 | <p>You may collect screened waste water and pump it to neighbouring agricultural land for soil injection as a fertiliser (subject to certain restrictions). You can only do this under a landspreading exemption. If you do this, you must take care that surface water run-off from the agricultural land does not cause contamination of local controlled water courses during extremely wet weather. You should ensure that you have adequate storage capacity to store waste water during these conditions, and you must be able to make alternative arrangements if the wet weather persists and the storage capacity at the abattoir is in danger of being exceeded.</p> | N / A – no neighbouring agricultural land |
| 2. Operations | | |
| 2.1 Lairage: NO BAT LISTED | | |
| 2.2 Bleeding – You should where appropriate | | |
| 1 | <p>Collect blood hygienically for human consumption or for use in pet food. The objective is to collect as much blood as possible for reuse or separate disposal to reduce the loading on the effluent treatment system.</p> | N / A - No change to the slaughter process as a result of this variation. |
| 2 | <p>Ensure efficient bleeding processes and maximum blood collection in the blood trough. Blood troughs should be long enough to collect blood draining from the carcass for at least 5½ to 6 minutes after the animal’s throat has been cut.</p> | N / A - No change to the slaughter process as a result of this variation. |
| 3 | <p>Ensure the blood trough is fitted with a double drain – one opening for the blood to be pumped to a tanker for disposal and the other for wash water. A removable plug seals the opening when not in use. You should examine whether additional blood collection sumps at other parts of the process, e.g.</p> | N / A - No change to the slaughter process as a result of this variation. |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|--|---|
| BAT No | BAT Description | Site Assessment |
| | the legging platform where the back legs are skinned, would assist the collection. | |
| 4 | During end of shift cleaning, squeegee blood that has coagulated on the base/walls of the trough towards the drain and as much as possible pump to the blood tanker. The blood trough should be pitched and curved to facilitate squeegeeing of partially congealed blood into the drain. When as much blood as possible has been collected, the plug in the drain can be removed and the whole trough washed down with water which is typically discharged to the site wastewater drainage system | N / A - No change to the slaughter process as a result of this variation. |
| 2.3 Hide, head and hoof removal for cattle and sheep: NO BAT LISTED | | |
| 2.4 Pig scalding – You should consider the following techniques and use where appropriate: | | |
| 1 | Minimise drag out by collection and draining back to tank | N/A – cattle only abattoir. |
| 2 | Use a conveyor system to drag the carcass through, and a longer tank with counter current water filtration and recycling, to reduce the requirement for make up water and reduce the volume of effluent produced. | N/A – cattle only abattoir. |
| 3 | Where vat scalding is used, the tank(s) should be insulated and covered with a lid to avoid heat and evaporation losses. | N/A – cattle only abattoir. |
| 4 | Avoid discharging waste waters from scald tanks whilst hot | N/A – cattle only abattoir. |
| 5 | Ensure that the discharge of the scald tank into the effluent treatment system cannot overload or bypass the treatment plant | N/A – cattle only abattoir. |
| 2.5 Pig hair and toenail removal and pig singeing – You should consider the following techniques and use where appropriate: | | |
| 1 | Reuse of cooling water | N/A – cattle only abattoir. |
| 2 | Reuse of singeing unit cooling water for rinses in the dehairing and brushing processes | N/A – cattle only abattoir. |
| 3 | Heat recovery from the singeing exhaust | N/A – cattle only abattoir. |
| 4 | Efficient extraction leading to a suitably designed stack. | N/A – cattle only abattoir. |
| 2.6 Evisceration and gut room processes | | |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|---|--|---|
| BAT No | BAT Description | Site Assessment |
| 1 | Wash the dry paunch contents using counter current water filtration and recycling, which will further reduce the requirement for make up water and reduce the volume of effluent produced. | N / A - No change to the slaughter process as a result of this variation. |
| 2 | Paunch manure should not be discharged to the effluent collection system. In addition to the high oxygen demand (COD > 100,000 mg/litre), undigested solids are not easily degraded in biological systems and tend to build up as sludge in the system, thus reducing treatment efficiency. | N / A - No change to the slaughter process as a result of this variation. |
| 3 | Paunch manure (from cattle) is an ideal medium for composting or vermiculture. This should be investigated as a preferred alternative to disposal. | N / A - No change to the slaughter process as a result of this variation. |
| 4 | Where maceration is used to reduce the volume of waste, then the macerator and washing equipment should be maintained regularly to ensure that the blades are in good condition and to optimise the speed and separation of the blades. This will optimise the efficiency of the cutting operation and reduce the amount of waste offal which becomes mixed in with the wash water | N / A - No change to the slaughter process as a result of this variation. |
| 2.7 Cutting, portioning and trimming: | | |
| 1 | Keep meat wastes out of the wastewater stream to reduce effluent loading | Dry cleaning will be implemented. Floor grates fitted to internal drains |
| 2 | Carefully examine cutting and trimming operations for opportunities to intercept meat wastes before they enter the drains | All operations will be supervised and operatives trained. |
| 3 | Handle and transfer meat efficiently, to avoid wastage | Existing HACCP system will be updated to cover new production area. |
| 4 | Floor drain grates and catch pots in the drainage system should be in place | Floor drain grates and catch pots in the drainage system to be in place. |
| 2.8 Secondary processing: | | |
| 1 | The measures outlined above for cutting should be implemented | See above. |
| 2.9 Cleaning – You should where appropriate: | | |
| 1 | Stop staff from removing floor-drain grates and flushing meat scraps directly down the drain during cleaning. Even if there is a subsequent screen or catch pot to trap solids, when these meat scraps enter the | To be complied with via update of existing HACCP system and training. |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|--|--|
| BAT No | BAT Description | Site Assessment |
| | wastewater stream they are subjected to turbulence, pumping and mechanical action which breaks the meat down. This releases high COD substances into solution, along with colloidal and suspended fats and solids. Subsequent wastewater treatment and effluent disposal to foul sewer can be expensive. | |
| 2 | Keep meat wastes out of the wastewater stream to reduce effluent loading. This will reduce the COD and suspended solids concentration of the waste water from cleaning. | Dry cleaning will be undertaken and floor grates fitted to prevent meat waste entering the drainage system |
| 3 | <p>Review your management practices for blood segregation and clean-up operations taking into account the following techniques:</p> <ul style="list-style-type: none"> installing trays to collect waste as it falls to the floor checking drains regularly to ensure that catch pots are in place emptying catch pots into a waste bin and replacing in the drains before beginning to clean an area dry pre-cleaning of process areas before wet cleaning avoiding unnecessary hosing of blood and meat scraps into the drains ensuring catch pots are in place during cleaning (for example by installing lockable catch pots) fitting hoses with spray nozzles, and optimising water pressure at jets, nozzles and orifices using flat jet nozzles to provide maximum impact and velocity. A spray of up to 60° provides wide coverage and a sweeping effect to propel solids towards floor drains use of an automatic water supply shut off on trigger operated spray guns or hoses. using cold water for first rinse as warm water will make protein materials adhere to surfaces. | All will be complied with subject to ensuring no conflict with hygiene regulations and update of the HACCP plan. |
| 3. Emissions and Monitoring | | |
| 3.1 Emissions to air: NO BAT LISTED | | |
| 3.2 Emissions to Water – You should where appropriate: | | |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|--|---|
| BAT No | BAT Description | Site Assessment |
| 1 | Keep raw materials and product out of the wastewater system wherever possible. Waste water from process areas at abattoirs is normally screened to remove hairs, meat scraps and gross solids to reduce BOD and prevent drains becoming blocked. e.g. The outlets from the pig scald tanks should pass through a screen or sedimentation trap before discharge to the waste water treatment system as whole, to reduce the loading and in some cases shock loading of the discharge of this unit. | Internal drains fitted with 6 mm floor grates to keep materials out of drains. |
| 2 | Use a balancing tank or pond (equalisation or balancing), with a hydraulic retention time of 6 – 12 hours, which can improve treatment in the following ways: by allowing waste streams to be combined e.g. acid and alkali streams from the regeneration of deionisers; or high BOD and low BOD waste streams. This can reduce consumption of reagents by making the flow rate less variable. This can reduce the size of the treatment plant needed, as it only has to handle the average flow and not the peak flow. | N / A – no change to current effluent treatment systems as a result of this variation application. |
| 3 | Provide contingency measures to prevent accidental discharges from overloading or damaging the treatment plant. These will often include providing a diversion tank into which potentially damaging wastewater can be diverted. This should typically have a capacity of 2 – 3 hours at peak flow rate. The wastewater should be monitored upstream of the treatment plant to allow automatic diversion to the tank. The contents of the diversion tank may be gradually re-introduced into the wastewater stream, or removed for off-site disposal. If you do not provide a diversion tank, you must tell us what equivalent measures you use to protect your treatment plant | N / A – no change to current effluent treatment systems as a result of this variation application. |
| 4 | If you operate an activated sludge plant, you must manage the following issues carefully: the development of bulking sludges the carrying of excessive biomass inventories | N/A – no sludge plant on site or change to the current treatment systems as a result of this application. |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|--|---|---|
| BAT No | BAT Description | Site Assessment |
| | the formation of biologically stable foam the inhibition of microbial activity by biocidal substances from cleaning/sterilising agents. | |
| 5 | At sites with biological treatment plant ensure the surface water drains are not routed to the treatment plant. | N/A – no sludge plant on site or change to the current treatment systems as a result of this application. |
| 3.2 Fugitive emissions – You should where appropriate: | | |
| 1 | Regularly inspect pipe joints, shaft seals and gaskets in the refrigeration plant using proprietary leak detection equipment. | Systems will be maintained under contract and serviced regularly. Servicing will include leak detection in compliance with current Regulations |
| 2 | Ensure that a system log book is kept which records: quantity of refrigerant and oil added to or removed from the system(s) leakage testing results location and details of specific leakage incidents | Systems will be maintained under contract and serviced regularly. Servicing will include leak detection in compliance with current Regulations |
| 3.4 Odour: | | |
| 1 | Minimise manure production by controlling feeding rate prior to transportation of animals to site | N / A – no change to livestock handling techniques as a result of this variation. |
| 2 | Storage of putrescible waste /by-products/ in sealed containers | ABP trailers will be covered at end of shift and removed regularly from site |
| 3 | Frequent cleandown of waste containers to prevent build-up of malodorous material | No change to existing. |
| 4 | Frequent e.g. daily removal off site of blood/ by-products | CAT 3 trailer removed daily. No impact on other ABP streams as a result of this variation application. |
| 5 | Refrigeration of blood/ animal by-products / putrescible material if extended on-site storage is carried out | Extended on-site storage will not occur |
| 6 | Enclosure of potentially odorous operations e.g. macerator equipment used to chop and wash inedible offal effluent treatment plant | New process operations internal (enclosed) within a temperature controlled building. N / A - No effluent treatment plant included as part of this variation application. |

| Table 1.1 – Best Available Technique Assessment: EPR 6.12 guidance | | |
|---|---|--|
| BAT No | BAT Description | Site Assessment |
| 7 | Install odour abatement e.g. activated carbon filter on the blood storage tank vents | N / A – no change as part of this variation application. |
| 8 | Back vent road tankers through the odour abatement unit during blood collection | Complied with |
| 9 | Use of screens/catchpots to prevent meat scraps / fats from entering drainage system | Complied with |
| 10 | Ensure that effluent treatment plant is adequately maintained . Where present, aeration tanks should be kept aerated and mixed at all times except where maintenance necessitates shut-down of the aeration system. Implement alternative operational arrangements during shut-down to avoid odour nuisance | N / A - No effluent treatment plant included as part of this variation application. |
| 11 | Control of hydraulic retention times and desludging in effluent systems to prevent malodours | N / A - No effluent treatment plant included as part of this variation application. |
| 3.5 Noise and Vibration: | | |
| 1 | Although cattle and sheep are generally fairly quiet, pigs may be noisy, particularly during unloading and marshalling operations. If there is a potential for impact on the neighbours then these operations should be carried at reasonable hours of day | N/ A – no change to livestock handling procedures as a result of this variation application. |
| 3.6 Monitoring – The following should be used: | | |
| 1 | Identify process variables that may affect the environment and monitor as appropriate | Monitoring undertaken as required |
| 2 | Assess whether monitoring the parameters in Table 4 below would enable you to minimise your environmental impact or reduce the risk of an accident | Will be complied with where relevant |

1.3 BAT Assessment – BRef

This Section of the report compares the proposed varied operations at site against the relevant BAT requirements as specified in the EC’s “Reference Document on Best Available Techniques in the Slaughterhouse and Animal By-products Industries”, May 2005, guidance document. The comparison

has been undertaken against the BAT requirements specified in Section 5 of the BRef. Section 5 is the concluding BAT requirements based on supporting evidence and discussions in Sections 3 and 4 of the BRef. The assessment is presented in Table 1.2 below and presented as follows

- Where site falls short of meeting BAT requirements an improvement programme will be implemented, if relevant.
- Where BAT clauses are deemed not applicable, “N/A” has been inserted in the ‘Site Assessment’ column.
- Where information has been provided in other application reports, including the above section in this report, a simple response of “complied with” has been provided.

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|---|---|
| BAT Description | Site Assessment |
| 5.1. Slaughterhouse and animal by-product installations | |
| 5.11 General processes and operations | |
| 1 use an environmental management system (see Section 4.1.1 and 5.1.1.1) | EMS implemented on site and to be reviewed to ensure varied operations are suitably covered. |
| 2 provide training (see Section 4.1.2) | Complied with |
| 3 use a planned maintenance programme (see Section 4.1.3) | Complied with |
| 4 apply dedicated metering of water consumption (see Section 4.1.4) | Mains water meter installed |
| 5 separate process and non-process wastewater (see Section 4.1.5) | Complied with |
| 6 remove all running water hoses and repair dripping taps and toilets (see Section 4.1.7) | All hoses on trigger control. All wash stations operate in a default off mode. Maintenance system in place to repair leaks |
| 7 fit and use drains with screens and/or traps to prevent solid material from entering the waste water (see Section 4.1.11) | Complied with |
| 8 dry clean installations and transport by-products dry (see Section 4.1.12), followed by pressure cleaning (see Section 4.1.10) using hoses fitted with hand-operated triggers (see Section 4.1.9) and where necessary hot water supplied from thermostatically controlled steam and water valves (see Section 4.1.23) | Complied with |
| 9 apply overfilling protection on bulk storage tanks (see Section 4.1.13) | N / A |
| 10 provide and use bunds for bulk storage tanks (see Section 4.1.14) | N / A |
| 11 implement energy management systems (see Sections 4.1.16 and 4.1.17) | Energy management is part of routine management decision making. Site are looking into the possibility of joining a CCA scheme. |

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|--|---|
| BAT Description | Site Assessment |
| 12 implement refrigeration management systems (see Section 4.1.18) | The necessary and relevant aspects of the refrigeration equipment form part of the planned preventative maintenance regime |
| 13 operate controls over refrigeration plant running times (see Section 4.1.19) | The necessary and relevant aspects of the refrigeration equipment form part of the planned preventative maintenance regime |
| 14 fit and operate chill room door closing switches (see Section 4.1.21) | Complied with |
| 15 recuperate heat from refrigeration plants (see Section 4.1.22) | Complied with |
| 16 use thermostatically controlled steam and water blending valves (see Section 4.1.23) | N/A |
| 17 rationalise and insulate steam and water pipework (see Section 4.1.24) | Complied with. |
| 18 isolate steam and water services (see Section 4.1.25) | N/A |
| 19 implement light management systems (see Section 4.1.26) | Energy management is part of routine management decision making. Site are looking into the possibility of joining a CCA scheme. |
| 20 store animal by-products for short periods and possibly to refrigerate them (see Section 4.1.27) | Complied with |
| 21 audit odour (see Section 4.1.28) | Complied with |
| 22 design and construct vehicles, equipment and premises to ensure that they are easy to clean (see Section 4.1.30) | Complied with |
| 23 clean materials storage areas frequently (see Section 4.1.31) | Complied with |
| 24 implement a noise management system (see Section 4.1.36) | Not relevant |
| 25 reduce noise at, e.g. roof extract fans, balance lagoon blowers and refrigeration plants (see Sections 4.1.3, 4.1.36, 4.1.37, 4.1.38 and 4.1.39) | Not relevant |
| 26 replace the use of fuel oil with natural gas, where a natural gas supply is available (see Section 4.1.40) | Complied with |
| 27 enclose animal by-products during transport, loading/unloading and storage (see Section 4.1.29) | Blood is stored in a sealed tank. ABP trailers sheeted at the end of production / working day. |
| 28 where it is not possible to treat blood before its decomposition starts to cause odour problems and/or quality problems, refrigerate it as quickly as possible and for as short a time as possible, to minimise decomposition (see Section 4.2.1.8) | Not relevant |
| 29 export any heat and/or power produced which cannot be used on-site | Not relevant |

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|---|--|
| BAT Description | Site Assessment |
| 5.1.4 Installation and equipment cleaning | |
| 1 manage and minimise the quantities of water and detergents consumed (see Section 4.1.42.1) | Complied with. |
| 2 select those detergents which cause minimum impact on the environment (see Section 4.1.42.2), without compromising the efficacy of cleaning | Complied with. |
| 3 avoid, where possible, the use of cleaning and disinfectant agents containing active chlorine (see Section 4.1.42.3) and | Complied with. |
| 4 where the equipment is suitable, operate a cleaning-in-place system (see Section 4.2.4.3). | Complied with. |
| 5.1.5 Treatment of waste water | |
| 1 prevent waste water stagnation (see Section 4.1.43.3) | Complied with |
| 2 apply an initial screening of solids using sieves (see Section 4.1.43.4) at the slaughterhouse or animal by-products installation | Complied with |
| 3 remove fat from waste water, using a fat trap (see Section 4.1.43.9) | Not required |
| 4 use a flotation plant, possibly combined with the use of flocculants, to remove additional solids (see Section 4.1.43.10) | N / A |
| 5 use a waste water equalisation tank (see Section 4.1.43.11) | Not required |
| 6 provide a waste water holding capacity in excess of routine requirements (see Section 4.1.43.1) | N / A |
| 7 prevent liquid seepage and odour emissions from waste water treatment tanks, by sealing their sides and bases and either covering them or aerating them (see Sections 4.1.43.12 and 4.1.43.13) | N / A |
| 8 subject the effluent to a biological treatment process. Aerobic and anaerobic treatments which are applied to waste water from slaughterhouses and animal by-products installations are described in Sections 2.3.1.2, 2.3.2.1.3, 4.1.43.14, 4.1.43.15, 4.2.6.2, 4.2.6.3 and 4.3.3.15 | N / A |
| 9 remove nitrogen and phosphorus. Some information is given in Section 2.3.1.2 | Not complied with on site, but discharge goes to Yorkshire Water, which applies such treatment |
| 10 remove the sludges produced and subject them to further animal by-product uses. These routes and their conditions of application are regulated by ABP Regulation 1774/2002/EC | N / A |
| 11 use CH ₄ gas produced during anaerobic treatment for the production of heat and/or power | N / A |
| 12 subject the resulting effluent to tertiary treatment | N / A |
| 13 regularly conduct laboratory analyses of the effluent composition and maintain records (see Section 4.1.43.2). Further information on monitoring techniques is available in the current "Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector" BREF [341, EC, 2002]. | Complied with |
| 5.2 Additional BAT for Slaughterhouses | |

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|---|---|
| BAT Description | Site Assessment |
| 1 dry scrape delivery vehicles (see Sections 4.2.1.1) and prior to cleaning with a high pressure hose (see Section 4.2.1.2) | N / A |
| 2 avoid carcase washing and where this is not possible to minimise it, combined with clean slaughter techniques (see Section 4.2.1.4) | Complied with |
| 3 continuously collect by-products dry and segregated from each other, along the length of the slaughter-line (see Section 4.2.1.6), combined with optimising bleeding and the collection of blood (see Section 4.2.2.2.1) and segregating the storage and handling of different kinds of by-products (see Section 4.2.5.1) | Complied with |
| 4 operate a double drain from the bleed hall (see Section 4.2.1.7) | N / A |
| 5 collect floor waste dry (see Section 4.2.1.9) | Complied with |
| 6 remove all unnecessary taps from the slaughter-line (see Section 4.2.1.13) | N / A |
| 7 insulate and cover knife sterilisers (see Section 4.2.1.14), combined with sterilising knives using low-pressure steam (see Section 4.2.1.17) | Complied with |
| 8 operate hand and apron cleaning cubicles, with a “water off” default (see Section 4.2.1.18) | Complied with |
| 9 manage and monitor compressed air use (see Section 4.2.1.19) | Complied with as part of PPM being implemented on site |
| 10 manage and monitor ventilation use (see Section 4.2.1.20) | Complied with as part of PPM being implemented on site |
| 11 use backward bowed centrifugal fans in ventilation and refrigeration systems (see Section 4.2.1.21) | Understood to be complied with |
| 12 manage and monitor the use of hot water (see Section 4.2.1.22) | Complied with and will form part of water review in line with standard Permit condition |
| 13 trim all hide/skin material not destined for tanning immediately after removal from the animal, except if there is no outlet for the use/valorisation of the trimmings (see Section 4.2.2.9.10). | N / A |
| 5.2.2 Additional BAT for all large animal slaughter houses. | |
| 1 stop feeding animals 12 hours prior to slaughter (see Section 4.2.2.1.1), combined with minimising the animals’ time in the slaughterhouse to reduce manure production (see Section 4.2.2.1.2) | N / A |
| 2 apply demand-controlled drinking water (see Section 4.2.2.1.4) | N / A |
| 3 shower pigs using water saving timer controlled nozzles (see Section 4.2.2.1.5) | N / A |
| 4 dry clean the lairage floor and to periodically clean it with water (see Section 4.2.2.1.6) | N / A |
| 5 use a squeegee for the initial cleaning of the blood collection trough (see Section 4.2.2.2.2) | N / A |

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|--|------------------------|
| BAT Description | Site Assessment |
| 6 steam scald pigs (vertical scalding) (see Section 4.2.2.3.1) | N / A |
| 7 in those existing slaughterhouses, where it is not yet economically viable to change to steam scalding, insulate and cover pig scalding tanks (see Section 4.2.2.3.2) and control the water level in those tanks (see Section 4.2.2.3.3) | N / A |
| 8 re-use cold water within pig de-hairing machines (see Section 4.2.2.4.1) and replace irrigation pipes with flat jet nozzles (see Section 4.2.2.4.2) | N / A |
| 9 re-use cooling water from pig singeing kilns (see Section 4.2.2.5.1) | N / A |
| 10 recover heat from pig singeing exhaust gases, for preheating water (see Section 4.2.2.5.2) | N / A |
| 11 shower pigs after singeing, using flat jet nozzles (see Section 4.2.2.5.3) | N / A |
| 12 replace irrigation pipes with flat jet nozzles for rind treatment in pig slaughterhouses (see Section 4.2.2.6.1) | N / A |
| 13 sterilise chest-opening saws in a cabinet with automated hot water nozzles (see Section 4.2.2.7.1) | Complied with. |
| 14 regulate and minimise the water used for moving intestines (see Section 4.2.2.7.2) | N / A |
| 15 use either water-spray/mist-cooling or blast-chilling/shock-cooling tunnel to cool pigs (see Sections 4.2.2.8.1 and 4.2.2.8.2) | N / A |
| 16 not shower pigs before they are chilled in a chilling tunnel (see Section 4.2.2.8.3) | N / A |
| 17 empty stomachs dry (see Section 4.2.2.9.2) | N / A |
| 18 collect the contents of small intestines dry (see Section 4.2.2.9.3), whether or not they are intended to be used for casings (see Section 4.2.2.9.4) | N / A |
| 19 regulate and minimise the water consumption during small and large intestine washing (see Section 4.2.2.9.6) | N / A |
| 20 regulate and minimise the water consumption during rinsing of tongues and hearts (see Section 4.2.2.9.9) | N / A |
| 21 use a mechanised fat trap for removing fat from water (see Section 4.2.2.9.7) | N / A |
| 22 according to the current Reference Document on Best Available Techniques for the Tanning of Hides and Skins [273, EC, 2001] BAT “is to process fresh hides and skins as far as they are available”. | N / A |
| 23 when it is impossible to process hides and skins before 8 – 12 hours, with the actual range depending on local conditions, to immediately store hides between 10 and 15 °C (see Section 4.2.2.9.11) | N / A |
| 24 when it is impossible to process hides before a period of between 8 – 12 hours and 5 – 8 days, with the actual ranges depending on local conditions, to immediately refrigerate hides at 2 °C (see Section 4.2.2.9.15) and | N / A |

| Table 1.2 – Best Available Technique Assessment: BRef guidance | |
|---|------------------------|
| BAT Description | Site Assessment |
| 25 always immediately drum-salt all hides and skins, if they have to be stored for longer than 8 days, e.g. if they have to be transported overseas (see Section 4.2.2.9.12), combined with the dry collection of salt residues (see Section 4.2.2.9.14). | N / A |