

Engreen Environmental Consultants Ltd.

Report Title: Environmental Permit Variation Application – Installation Information

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

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1 Introduction

1.1 Document Scope

This document provides information in support of the Environmental Permit variation application for the Woolley Bros Rother Valley Abattoir, located in Holbrook, Sheffield. The National Grid Reference for the centre of the site is SK 44803 82046. The following details are provided for the applicant (as listed on the accompanying application forms):-

Company Name	WOOLLEY BROS. (WHOLESALE MEATS) LIMITED
Company Registration number	05417154
Site Name	Rother Valley Abattoir
Site Address	Rother Valley Way, Holbrook, Sheffield, South Yorkshire, S20 3RW
Environment Agency Permit Reference	EPR/RP3935FH

1.2 Background

Woolley Bros operate a red meat abattoir which is on an industrial estate located in Holbrook to the South East of Sheffield. The main activity undertaken at the abattoir is the slaughtering of cattle. The site currently has the capacity to slaughter c.300 cattle per day equating to a carcass production capacity of c.90 t / day. A Permit Variation application is to be made as a result of the company expanding their business which will result in the following proposed changes to existing operations:

- Extension - Extension added to the Northern part of the existing abattoir building, to increase capacity for chilling, cutting, preparing, and dispatching of meat products;
- Addition of a Schedule 1 Activity – Addition of a Schedule 1 activity for a finished product production capacity greater than 75 tonnes per day to the Permit;
- New Emission Points - Addition of emission points to foul and surface water sewers;
- Installation of small domestic boiler to be installed within the new extension.
- Permit Boundary - Increase in the areas of site covered by the Permit Boundary to cover the extended processing area.

1.3 Permitting Requirements

The facility is required to apply for a variation of their Environmental Permit (EP) in order to ensure compliance with the Environmental Permitting (England and Wales) Regulations 2016, SI 2016/1154. The relevant sections of the Regulations to describe the prescribed processes are:

Table 1.1 – Listed Activities	
EPR Schedule 1 Reference	Description
Section 6.8 A(1) (b)	Slaughtering animals at a plant with a carcass production capacity of more than 50 tonnes per day.
Section 6.8 A(1) (d)	Treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed (where the weight of the finished product excludes packaging)—.
(i)	only animal raw materials (other than milk only) with a finished product production capacity greater than 75 tonnes per day;

1.4 Sector Guidance Documents

The following sector guidance documents, and their relevant BAT requirements, have been considered during the process modifications and preparation of this application:

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

1.5 Application Structure

1.5.1 Application Documents

This application comprises a number of documents. This Installation Information report, P179-R01-F1, should be read in conjunction with the following documents:

- Application Forms;
- P179-R07-F1 – Non Technical Summary;
- P179-R02-F1 –Environmental Risk Assessment;
- P179-R03-F1 – BAT Assessment.
- P179-R04-F1 – EMS Summary
- P179-R05-F1 – Site Condition Report
- P179-R06-F1 – Site Drawings;

1.5.2 Report Format

This application document – Installation Information – is structured as follows:

- Introduction;
- Process Description;
- Emissions and Monitoring;
- Raw Material Utilisation;
- Wastes and Animal By-Products;
- Fugitive Emissions.

1.5.3 Diagrams and Plans

Report reference P179-R06-F1 contains drawings and plans of the installation highlighting the amended installation boundary and further plans that show the site layout, sensitive receptors, site drainage plan and emission points.

2 Process Description

2.1 Site Changes

Woolley Bros operate a red meat abattoir. The main activity undertaken at the abattoir is the slaughtering of cattle. The site currently has the capacity to slaughter c.300 cattle per day equating to a carcass production capacity of c.90 t / day. A Permit Variation application is to be made as a result of the company expanding their business which will result in the following proposed changes to existing operations:

- Site are looking to expand the operations undertaken on site through extending the Northern part of the abattoir building to increase capacity for chilling, cutting, preparing, and dispatching of meat products.
- The extension of the site extends outside of the current Permit boundary and therefore the Installation boundary has to be expanded to ensure it covers Permitted operations.
- Addition of a Schedule 1 Activity – Addition of a Schedule 1 activity for a finished product production capacity greater than 75 tonnes per day to the Permit.
- New Emission Points - Addition of emission points to foul and surface water sewers;
- Installation of small domestic boiler to be installed within the new extension.

2.2 Site Extension

2.2.1 New Building

The drawing 'Site Plan as Proposed' within the drawing report referenced P179-R06-F1 sets out how the existing abattoir is to be extended to the North. The plan shows the new building adjoining the existing building and extending up to the North, towards the 'Vantage House' Office block, where the current Site Offices are located.

2.2.2 New Building Process

The new building will provide additional cutting capacity and packaging capability for the abattoir. Initially, all meat to be processed within the new building will be sourced from the existing abattoir process and transferred via chain pulley lines.

Operatives will then work in process lines to cut, trim and portion the meat as per customers' requirements before it is packaged and stored in the chillers / blast freezers prior to dispatch.

Any fat collected from deboning and cutting is packaged for sale as edible fat where possible, or as an alternative, removed off site to defined animal by-product markets. The edible offals are packed into vacuum retail packs or block-packs for sale and despatch. All other trimmings from the cutting process will be transferred to suitable containers prior to transfer off site for further processing/ recovery.

The operating hours of the new cutting building will align with the cutting operations at the existing abattoir, which are typically 4:00 am - 2:30 pm Monday to Friday. Cleaning teams will then ensure operational and process areas are cleaned down from 5:00 pm - 2:00 am to ensure compliance with food hygiene requirements.

The energy supply for the new building will be sourced from Grid Electricity. There will be a small staff canteen provided with a small gas fired boiler. Further discussion of additional energy consumption has been provided within the relevant sections below.

2.2.3 Additional Refrigeration Systems

Additional refrigeration will be installed on site as part of the development. The systems to be installed are still being finalised to ensure they meet site requirements. Any system installed will be inline with

current Environmental Regulations and a schedule of the refrigeration equipment will be listed within the sites Environmental Management System. In addition, maintenance is carried out by contracted refrigeration maintenance specialists who look after all equipment and F-Gas compliance requirements.

2.2.4 Tray wash

The site will minimise packaging waste by the use of re-useable plastic trays for the transport of products. For hygiene reasons these trays must be cleaned before re-use. This is done in a dedicated tray wash area. Empty trays are collected and manually loaded into an automated tray washer and are conveyed through on a roller system. In the washer the trays are washed with hot water, detergents and rinse agents. The tray wash unit is fitted with a water sump which allows the recycling of water to minimise water and energy use and reduce effluent production. Cleaned trays are returned to the production line. The hot water for the tray wash facility is provided by its own heating element. Waste washing water from the tray wash facility is discharged to sewer.

2.2.5 Maintenance

Site engineers are responsible for undertaking the maintenance activities on site. Maintenance takes the form of reactive maintenance activities (reacting to breakdowns etc) and planned preventative maintenance (to attempt to reduce breakdowns / down time). The site will develop their PPM system to log all items of equipment that require planned preventative maintenance as part of this development. The system will and produce work logs for the engineers to ensure that those items requiring PPM are adequately addressed. Where appropriate, the site employs suitably qualified contractors to undertake specialised items of maintenance, including PPM (eg refrigeration systems).

2.2.6 Permitted Boundary and External Alterations

The Permit Boundary is to be extended to cover the new process building, service yard areas and Site's Office block at Vantage House. The new Permit Boundary is shown on the 'Installation Boundary Plan' within the drawing report referenced P179-R06-F1.

The drawings 'Site Plan as Proposed' and the 'Drainage Plan' within the drawing report detail the yard and drainage modifications to be made on site.

Yard service areas are to be concreted and car parks and laid to fall to a new surface water system fitted with interceptors. Further detail as to the drainage systems to be installed has been provided within sections of this report below.

3 Emissions and Monitoring

3.1 Introduction

This Section of the report identifies potential emissions from site alterations and details the monitoring methods to be implemented, where relevant.

3.2 Emissions to Air

3.2.1 Point Source Emissions

A small domestic boiler will be installed within a staff canteen to be included within the new development. The boiler will be serviced in accordance with the manufacturer's recommendations. Given the size of the boiler, no further detail has been provided within this application.

3.3 Fugitive Releases to Air

Fugitive emissions to air for varied operations are expected to be minimal. Further detail and assessment of fugitive releases has been dealt with in the Environmental Risk Assessment & EAMP respectively as referenced in Section 1.5.1 of this report. The Environmental Management System implemented on site will include routine and documented inspections to ensure that fugitive releases are identified and rectified accordingly.

3.4 Point Source Releases to Water

There are no direct discharges from site to ground or surface waters. All point source releases are to sewer. The point source releases to sewer from site are shown on the Drainage Plan, in report reference P179-R06-F1. A description of these is provided below.

3.4.1 Discharge Points

The table below provides a summary of all drainage discharge points from site as detailed on the Drainage Plan.

Emission Point Reference	Discharge Description	Discharge	New or Existing Emission Point listed within the Permit
E1 – Located on Southern Permit Boundary	Existing trade effluent and foul discharge from site which has been screened and discharged to combined sewer. Surface water from the yard service areas and the Office car park discharge via this emission point, following filtration via interceptors and Triton Type storage tank. Further detail of the new surface water system is provided below. Domestic foul sewage from the new build will be connected to the existing foul drainage system.	Yorkshire Water Combined Sewer -	Existing

Table 3.1 – Drainage Descriptions			
Emission Point Reference	Discharge Description	Discharge	New or Existing Emission Point listed within the Permit
S1 - Located on Western Site Boundary	Extension of the Permit Boundary incorporates the existing Vantage House Office block within the Installation Boundary. This discharge is the clean roof rainwater runoff and storm overflow from the office and staff car parks.	Yorkshire Water - Surface Water Sewer	New
F1 – Located on Western Site Boundary	Extension of the Permit Boundary incorporates the existing Vantage House Office block within the Installation Boundary. This discharge is the domestic foul sewage from the office block.	Yorkshire Water Foul Sewer -	New

3.4.2 New Surface Water Discharge System

The service yard and office yard areas will be covered with an impermeable surface and laid to fall to a new surface water drainage system, that will incorporate existing surface water drainage gullies and channels.

The surface water will flow to an attenuation storage tank via new Klargester (or similar approved) petrol interceptors which will have audible hydrocarbon alarms fitted which relay to a switchboard. Two interceptors will be fitted and sized to serve the area covered. One will primarily serve the existing abattoir yard area and the other will serve the new building service yard area and office parking area.

The attenuation storage tank will be a Triton type storage tank with inbuilt filtration and have capacity to hold approximately 340m³ of storm water. From the attenuation tank, the new surface water system connects with the existing effluent drainage system down stream of the effluent screen and sampling Infrastructure, before discharge to sewer via the emission point listed in the current Permit.

3.4.3 Trade Effluent Discharges

Process effluent is generated from the following areas:

- Production processes
- Traywash
- Cleaning.

This will be discharge to sewer via the existing site emission point.

3.5 Fugitive Releases to Land and Water

The installation will continue undertake a thorough infrastructure monitoring programme that has been designed to ensure there is no loss of integrity to the systems designed to prevent fugitive emissions to land and to controlled waters. The infrastructure monitoring programme forms part of the Fugitive Emissions Monitoring Programme within the EMS and incorporates the elements listed below -

- ABP vessels;
- Impermeable surfaces;
- Drainage systems.

Where deficiencies are encountered these will be reported as part of the EMS using the incident and corrective action structure and repairs instigated. Further detail has been provided within the draft Fugitive Emissions Monitoring Programme in EM 01-006.

3.6 Emission Controls

The emissions identified above may require various levels of control requirements. Where appropriate, these have been dealt with in more detail within the Environmental Risk Assessment, P179-R02-F1, and EAMP, EM 01-004, respectively.

4 Raw Material Utilisation

4.1 Introduction

This Section of the report details any changes in raw materials, water and energy consumption as a result of the Permit Variation application.

4.2 Raw Materials

There will be no change to the raw materials used on site. In addition, meat product for operations undertaken in the new extension will primarily be sourced from the existing abattoir process.

There is anticipated to be a slight increase in the volume of cleaning materials used on site in order to ensure compliance with food hygiene requirements. Any significant changes in raw material usage will be quantified as part of the four yearly resource utilisation assessment required by site's Environmental Permit.

4.3 Water

Water for the new process building will be sourced from mains supply. There is anticipated to be a slight increase in the volume of water used on site as part of clean down operations within the new process building. These clean down operations are required to ensure compliance with food hygiene requirements. Any changes in water usage will be quantified as part of the annual and four yearly reporting requirements detailed within site's Environmental Permit.

4.3.1 Energy

Energy used as part of the varied operations will be in the form of electricity. It is noted that natural Gas will be used to fire a small domestic boiler within the staff canteen. Energy usage from the gas boiler has not been discussed in any further detail below.

Data has been provided for existing site energy usage. Given the equipment and associated energy ratings has yet to be finalised for the new build, future annual usage has been based on a conservative estimate of a 25% increase in current usage. These values are presented in the table below and are the values that have been used throughout this report and related reports when assessing energy use and its potential impacts.

Energy Source	2018 Annual usage (MWh)	Estimated future annual usage (MWh)
Electricity	1810	c.2260
Notes		
1: Estimate based on c.25% increase in electricity.		

Any changes in energy consumption will be quantified as part of the annual and four yearly reporting requirements detailed within site's Environmental Permit.

4.3.1.1 Energy Efficiency Measures

The energy efficiency measures implemented as part of varied activities can be split into two categories:

- Operational and Maintenance;
- Physical Control Measures.

Further detail on the above categories is provided within the Tables below.

Table 4.4 –Operational and Maintenance Energy Efficiency Measures	
Maintenance and housekeeping measures	Further information
Operation of motors and drives	Motors and drives will be installed in accordance with suppliers' instructions. Motors and drives within the new process building will form part of the installation's preventative maintenance system and are regularly lubricated to ensure continued good performance. For larger motors variable speed drives soft start capabilities are employed to ensure optimum efficiency.
Hot water distribution systems	Hot water systems fully insulated.
Refrigeration Systems	Maintenance of the systems is to be undertaken under contract by refrigeration engineers. This ensures that the systems are maintained in line with legal requirements, helping to reduce losses from the system.
Boiler maintenance	The boiler will be installed in accordance with supplier's instructions. The boiler will be inspected and serviced in line with manufacturer instructions.
Insulation of steam systems, heated vessels and pipe work.	Insulation is kept in good repair.

Table 4.5 - Energy Efficiency Operating Techniques	
Operating measures	Further information
Lighting	Lights are only in use when they are needed. Low energy lighting has been specified for the new process building.
Motor Drives	Drive motors are turned off when not required, e.g. conveyor motors when no material being transferred.
Tray Wash System	Includes heat recovery elements.
Hot Water systems	Boiler system are regularly inspected and monitored to ensure feedwater matches specifications and does not foul boiler tubes.

5 Wastes and Animal By-Products

5.1 Waste and ABP

There will be no new waste or Animal By-Product (ABP) streams produced on site as a result of changes to site operations. However, there is anticipated to be a slight increase in the following wastes / ABP produced at site –

- Animal By-Products from cutting and trimming processes.
- General waste - Predominately from domestic facilities provided within the new building.
- Small amounts of packaging materials.

As set out in the Environmental Risk Assessment, Report P179-R02-F1, there is not anticipated to be a major uplift in wastes / ABP produced on site as a result of the varied operations. It has been noted that there will be a slight increase in Animal By-Products dispatched from site as a result of the cutting and trimming processes to be undertaken.

All wastes and ABP will continued to be transferred off site for recovery or disposal in line with the existing systems set out within the EMS.

5.2 Documentation

Waste and ABP documentation control forms part of the EMS on site. All waste and ABP contractors shall have appropriate licences, and waste transfer notes/consignment notes / commercial documents will be held on site for all relevant collections. Duty of Care transfer documents shall be maintained on site and incorporated within the management system detailed in document reference P179-R04-F1, EMS Summary.

All waste / ABP contractors carrying and receiving waste / ABP on behalf of the company will be suitably licensed, as appropriate.

5.3 Storage

The company has systems in place for the provision of dedicated waste and ABP storage facilities to house all of the identified waste / ABP streams prior to collection and removal off site. Additional storage containers be added as a result of the proposed development to collect ABP generated from the cutting and trimming process.

5.4 Waste Minimisation Audit

A review of wastes will be undertaken as required in the timescales specified in the Environmental Permit to provide a complete assessment of waste recovery. The review will be able to quantify any increases in wastes produced because of expanded site operations.. Specific improvements resulting from the recommendations of audits will be carried out within timescales set out within the audit report. In the meantime, the Company will aim to source recovery and re-use options higher up the waste hierarchy, in preference to disposal options, in line with current legislation.

6 Fugitive Emissions

6.1 Introduction

The Environmental Risk Assessment as referenced to in Section 1.5.1 of this report has demonstrated that fugitive emissions from the proposed changes are anticipated to be insignificant. The following sections discuss source and control techniques for noise, dust and odour emissions.

6.2 Noise

The proposed changes to permitted operations are not inherently noisy and noise is not considered to be an issue as a result of proposed changes at this installation. The majority of varied process operations will occur within an enclosed building, which restricts the possibility of noise transmission.

6.2.1 Noise Sources

Table 6.1 below provides detail as to the changes in noise sources at the installation.

Table 6.1 – Installation Noise Sources					
Source	Nature of Source	Hours of Operation	Nature of Noise	Contribution to Site	Noise Control Techniques
Site vehicles (forklifts etc)	Vehicle engines Reversing alarms	24 hours	Intermittent Vehicle motor noise, including reversing alarm noise.	Medium	Engines turned off when not in use Vehicles maintained on a regular basis as part of PPM
Air compressors	Motors and fans	24 hrs	Constant (motors/fans) and intermittent (short, sharp air discharges)	Medium	Enclosed within a building Subject to PPM Modern generation equipment therefore low intrusive noise levels.
Tray wash	Pumps and conveyors	Day time	Constant. Electric motors, fans, pumps	Low	Enclosed within building Subject to PPM
Boiler	Pumps/fans	24 hours	Constant. Electric motors, fans, pumps	Low	Enclosed within buildings Subject to PPM
Processed material dispatch vehicles. Forklift trucks	Heavy goods vehicles. Forklift trucks	During all hours of process operations.	Intermittent Vehicle motor noise, including reversing alarm noise.	Medium	Drivers requested not to excessively rev their engines. Engines of standing vehicles to be turned off. Electric hook-ups provided for refrigerated vehicles

Definitions

- High Noise detectable and distinguishable from background, with significant possibility of causing nuisance
- Medium Noise detectable and likely to be distinguishable from general background, but not expected to cause nuisance

Low Noise likely to be undetectable and undistinguishable from general background

6.2.2 Environmental Noise Surveys

Owing to the low number of nearby receptors and the low noise generating potential of site activities, combined with the low noise production from the installation there is no requirement for environmental noise surveys.

6.2.3 Noise Control Techniques

As described above the site's principal noise reduction techniques are that the new process operations take place within enclosed buildings and that drivers are requested not to excessively rev engines and to turn vehicle engines off when vehicles are standing. Combined with effective planned preventative maintenance regime on site, further noise reduction measures are deemed unnecessary.

6.3 Vibration

The changes at installation are not anticipated to be a source of vibration noticeable off-site. Basically the proposed changes at the installation do not use equipment of the type known to be a source of external vibration, e.g. large rotating equipment (fans etc) and impulse driven machinery (hammer mills etc). What new equipment there is will be installed in accordance with manufacturer's instructions to ensure that it remains well-balanced and does not create vibration due to out-of-balance forces. The preventative maintenance regime will supplement this to ensure that equipment remains correctly balanced and adjusted to prevent vibrations developing.

6.4 Dust

Dust emissions are not considered to be an issue following the process changes at this facility. There are no significant sources of dust at the facility from either materials or activities to be undertaken.

6.5 Odour

The Environmental Risk Assessment submitted in support of this variation application has demonstrated that odour emissions from varied operations are anticipated to be insignificant. This is due to the fact that the proposed operations are carried out within a temperature-controlled building. It is recognised that there will be a minimal volume of Animal By-Products produced from the cutting plant and these will be handled and removed from site in line with existing Animal-By Product handling Procedures.

The company will continue to operate their existing Odour Management Plan in line with their Environmental Permit requirements.