

Document reference: ECGE NTS

**PROCESSING OF ANIMAL BY-PRODUCTS TO PRODUCE TALLOW AND
MEAT AND BONE MEAL BY HEATING AND CENTRIFUGAL
EXTRACTION**

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NON-TECHNICAL SUMMARY

January 2017

OUR REF: 15/2949/ippc

1. INTRODUCTION

- 1.1 This is an application under the Environmental Permitting (England & Wales) Regulations, 2016, for an Environmental Permit to operate the prescribed activity of processing animal carcasses (technically animal by-products) at a site to the rear of the knackery at Main Road, Flagg, Derbyshire. An associated activity of generating electricity from animal oil (tallow) extracted in the process for use in the plant, the adjoining knackery and for export to the grid is also proposed; this is not itself a prescribed process.

2. PROCESS

- 2.1 The primary activity of the knackery is the collection and treatment of fallen stock. The hides are removed and sent for tanning, meat is sent for use in the maggot breeding industry, and where appropriate cuts of meat for packs of hounds, with the remainder of the carcass being bulked up for shipment to a traditional rendering facility.
- 2.2 With the new process in the Installation, animal by-products will be retained at Flagg for processing rather than dispatched off-site. The animal by-products will be delivered to the Installation plant as required – there will be no storage of carcasses/animal by-products on the Installation site – placed into a reception bin, macerated and then heated and passed to a high speed centrifuge, spinning off water and extracting the animal oil; the remaining solid material is passed to a dryer and the meat and bone meal (MBM) shipped off-site for use as a fuel elsewhere.
- 2.3 The oil (tallow) is retained and used as a fuel to generate electricity. The hot gases from electricity generation are passed to a heat exchange boiler before being emitted to atmosphere via a 450mm diameter chimney, extending 3m above the ridge of the Installation building. This constitutes a “Good Quality” Combined Heat and Power plant, using bio-fuel (tallow) and recovering part of the energy from electricity generation to create steam for use in the process.

3. Foreseeable Emissions and Control

3.1 Each of the foreseeable emissions has been identified and the potential points of release. The emissions with potential harm to the environment and sensitive receptors are:

- Odour
- Noise
- Combustion gases

3.2 The plant is fully enclosed from beginning to end and housed within a building, and the potential for polluting emissions could only occur in the event of catastrophic failure of the containment. There are no un-suppressed or untreated/unabated emissions.

- Odour will be prevented by not incorporating certain activities, such as storage, reduced in the wider site of the knackery by removing the need to bulk up material for off-site treatment, faster treatment, and abated where required by oxidising non-condensable air as combustion air in the generating set or abatement of air from venting pipes (from waste water storage tanks) via charcoal filters; containment within the process line and building will also prevent otherwise fugitive emissions.
- Noise will be prevented at source by appropriate procurement of equipment, specific housing of noisier plant, such as the generating set, within its own acoustic attenuating housing and by enclosing all plant within an attenuated building in accordance with the planning permission for the development.
- Combustion gases are contained at all times, with energy being recovered, and not only fully compliant with UK and European emission standards but exceeding them by using a low sulphur, bio-fuel.

Management and operation will ensure that all doors are closed except when required for access. Personnel doors will be self-closing. Loading of the trailer with MBM will only take place behind closed doors

3.3 There is no reasonable potential for harmful emissions to water, groundwater or land from the process. The plant is fully enclosed from beginning to end and within a building. Additionally, the plant will be licenced in accordance with the EU Animal By-Products Regulations (ABPR) and required to have impermeable surfaces including all delivery and wash down areas. Consequently:

- the waste water stream is spun out during the process and piped to waste water storage tanks for off-site disposal
- all wash down waters or spillages are contained via the new drainage system
- all liquids drain via a sump in its own bund and then pumped to a collection tank for off-site authorised disposal, and
- spilt material is collected and re-introduced into the plant for processing, including any material caught in drain traps from washing down.

3.7 There are no waste emissions to land or water. The waste water stream and wash down waters are collected and stored for off-site authorised disposal. There are no solid wastes from the process itself; the solids from processing is MBM which is a valuable biomass fuel. Residual solids from spillage are caught in traps in the drainage system and re-processed as noted above.

3.8 There is a small amount of recovered metal, such as bovine bolas, ingested wire etc, which will be returned to the knackery and recycled at an appropriate facility off-site. Used chemical and machinery lubricant containers will be collected and recycled or disposed of off-site at an appropriate facility.

4. Cleaning

4.1 There is a full cleaning schedule for machinery, process line and floors using hot and cold water and disinfectants. Additionally, any spillages will be removed and cleaned as they occur. This will aid abatement of odours.

4.2 The process line incorporates an automatic cleaning system which operates at the end of each processing cycle. This fully cleans the system, removing any residual solids which are passed back for processing, resulting in an all but clean final wash water which is collected as part of the waste stream for off-site authorised disposal.

5. Monitoring

5.1 There is a schedule for monitoring odours and emissions. Regular, daily olfactory assessment will take place with procedures in place to take immediate action to rectify the

situation in the event of malodours being perceived from operations at the Installation. In the event of equipment breakdown or malfunction, raw material will not be accepted into the Installation; in accordance with the Regulations and the Secretary of State's statutory guidance the raw material will be re-directed from the knackery for either processing at a rendering facility or disposal at an authorised incineration facility.

- 5.2 A full survey of the existing noise levels at the knackery site has been undertaken and an assessment made of the envisaged noise emitted from the plant and operations at the Installation. The resulting report indicates that noise from the Installation activity, located within an acoustically attenuated building in accordance with the Planning Permission, will be well within the existing ambient noise levels and below the World Health Organisation's guidance levels for avoiding night-time and daytime disturbance.
- 5.3 Testing of emissions on commissioning will be undertaken to demonstrate full compliance with national and EU standards. Regular observation of emissions from the chimney and each time on start-up will be undertaken.

6. Risk Assessment

- 6.1 A risk assessment of the process, and associated emissions, has been undertaken. The Hazard Analysis and Critical Control Point (HACCP) assessment and plan forms part of the Permit application. It identifies the critical control points in handling and treating the raw material of animal carcasses (by-products) which are regulated under the EU Animal By-Products Regulations and also identified emissions resulting from the use of this raw material and its processing; the latter is relevant for the Permit application and environmental control.
- 6.2 A further risk assessment in terms of identified emissions and risk to land pollution has also been undertaken. With the series of containments and controls it is concluded that there is little risk of pollution to land or water.