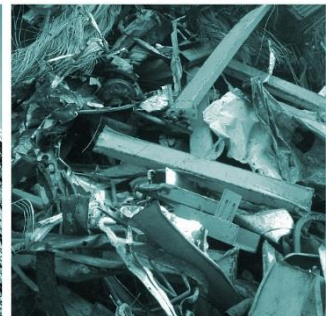
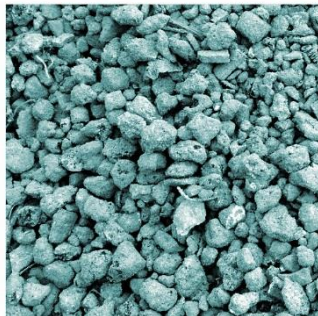
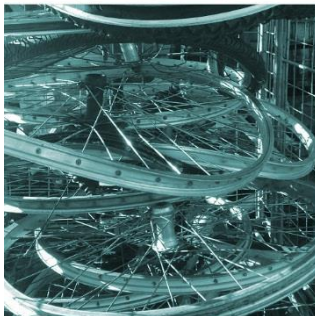
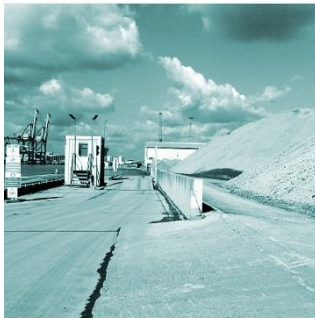
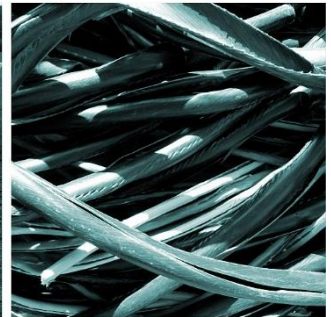
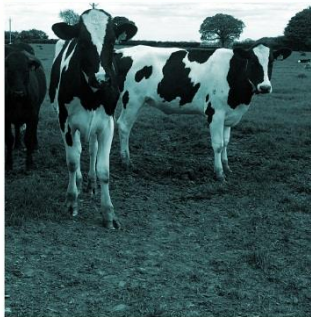


BROCKLESBY LIMITED

PERMIT VARIATION

Measures to Demonstrate BAT

June 2021



Client: Brocklesby Limited
Document Reference: HC1676-18

REPORT SCHEDULE

Operator: Brocklesby Limited

Client: Brocklesby Limited

Project Title: Brocklesby Limited - Permit Variation

Document Title: Measures to Demonstrate BAT

Document Reference: HC1676-18

Report Status: Final V1.0

Project Director: Joanna Holland

Project Manager: Jo Chapman

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REVIEWER	
Joanna Holland	8 th June 2021
APPROVED	
Joanna Holland	8 th June 2021

REVISION HISTORY	DATE	COMMENTS	APPROVED
Final Version 1.0	8 th June 2021	For Client Review	Joanna Holland
Final Version 1.0	22 nd June 2021	For submission to EA	Rob Brocklesby

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1. INTRODUCTION

1.1. Introduction

- 1.1.1. The Brocklesby Ltd facility is a waste handling facility, situated Crosslands Lane, North Cave, East Riding of Yorkshire, HU15 2PG, approximate central NGR SE 88124 32281. The site processes used edible cooking oil and fatty food wastes and has been in operation at North Cave, on the site of a former aluminium smelting works, since 1997.
- 1.1.2. The processed oils and fats are sent on for use in biofuels and energy generation, and residual oils and water arising from the process are sent for use as Anaerobic Digestion (AD) feedstocks.
- 1.1.3. This document is supplied in support of a permit variation application to incorporate changes made to the site infrastructure. Major refurbishment works were required at the site following damage to some of the sites infrastructure. In planning and installing the new infrastructure, the operator has taken the opportunity to make changes to both improve operations and to increase processing capacity.
- 1.1.4. Details of the changes are provided in document reference **HC1676-02 Summary of Proposed Changes** and are summarised below.
- New replacement tank farm consisting of sixteen 150 tonne tanks and four 500 tonne tanks. The new tank farm total capacity will be 4,400 tonnes which represents an increase from the previous tank farm capacity of 1,500 tonnes.
 - An increase in the total storage capacity at the site (tank farm and other pre-existing tanks) to approximately 6000m³ total site capacity, compared to the former total storage capacity of approximately 3,000m³.
 - An increase to annual treatment capacity to a capacity of 225,000tpa.
 - Additional weighbridge and new tanker loading, and offloading are to allow for appropriate vehicle management.
 - A new odour abatement unit to replace a previous unit, and new odour abatement units to serve the new tank farm.
 - New bunding arrangement to provide secondary containment for the new tank farm.
 - New tertiary containment structures to provide additional whole site containment capacity.
 - Two replacement boiler units to replace pre-existing units. These have been replaced with new units which will allow for a range of efficiency improvements during operation.
 - Removal of the single hazardous waste code on the list of permitted wastes, and addition of two new non-hazardous waste codes.
 - Application of currently undertaken chemical treatment processes to non-hazardous wastes received at the site.
 - Addition of a new boiler house, welfare, and workshop unit building at the site.
 - Addition of a new discharge point to foul sewer for boiler blowdown in accordance with a trade effluent discharge consent issued by the local water company.
 - There is not change to the esterification plant or activity at the site arising from the changes. There is no proposed change to the previous process or processing capacity.
- 1.1.5. The applicant commits to ensuring that all processes are undertaken in line with Best Available Techniques (BAT). To address BAT for the specific needs of this food waste handling facility it has been necessary to reference more than one document as follows:

- Environment Agency (EA) Sector Guidance Note IPPC S5.06, Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, Issue 5, May 2013;
- ERP 6.10, 2009, Additional Guidance for the Food and Drink Sector;
- European Commission JRC Science for Policy Report, Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control, Pinasseau A. et al, 2018.
- EA 2020: Consultation Draft. Appropriate Measures for the Biological Treatment of Waste.
- How to Comply with your Environmental Permit: Additional Guidance for The Production of Large Volume Organic Chemicals (EPR4.01).
- Directive (EU) 2015/2193 on the limitation of emissions of certain pollutants into the air from MCPs known as the Medium Combustion Plant Directive (MCPD).

1.1.6. This document has been structured to reflect the document layout of the S5.06 guidance document. However, reference has been made to the other guidance documents throughout to ensure all appropriate aspects of the food handling facility are assessed against the relevant requirements and to minimise environmental impact.

1.1.7. The Brocklesby Limited facility does not carry out biological treatment of waste, but it does handle biodegradable wastes, carry out physical treatment of such wastes, and supply wastes to sites that do undertake subsequent biological treatment of the waste. The EA's consultation draft on guidance for the biological treatment sector is referenced for this reason.

1.2. Process Overview

1.2.1. The Brocklesby Limited facility is designed to receive and process up to 225,000tpa of non-hazardous food wastes received in liquid and solid form.

1.2.2. Liquid wastes received by bulk tanker are delivered to the tank farm. The tank farm tanks are contained within a bunded area and fitted with carbon filters for abatement of odour emissions of displaced air on tank filling.

1.2.3. Solid waste fats and oils (UCO) are received at the site in 10gm butter portions, retail packs of spreads, 20l, 60l, 120l, 200l drums as well as IBC's. Other solid food waste arrives on site in sealed skips, IBC's, roll on roll off skips, and bulk tipping trailers. The other solid food waste material received in bulk containers is taken to a reception area and tipped into a contained bund pending processing.

1.2.4. Wastes received at the site are processed to produce oils that are then exported from site for use as biodiesel or for energy generation.

1.2.5. Other water and solids produced as an outcome of processing at the site are sent for use as AD feedstocks.

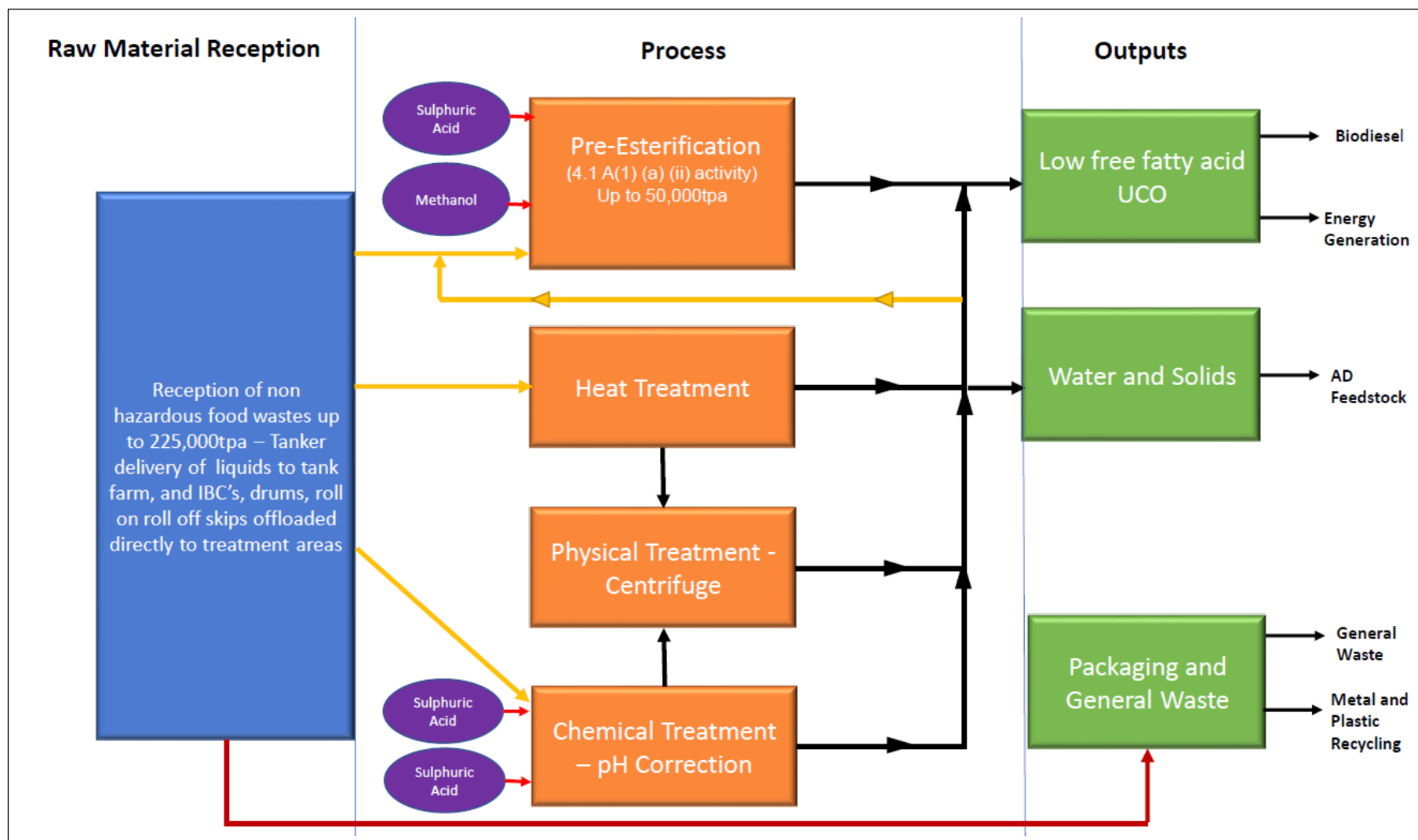
1.2.6. Wastes received at the site may be subject to several different methods of processing to produce these end products.

1.2.7. Wastes may undergo physical treatment, chemical treatment, or heat treatment or a combination of

these. Wastes as received at the site, and wastes derived from these on-site treatment processes may be processed in the esterification plant where methanol and sulphuric acid additions are made to achieve esterification of fatty acids (to produce methyl esters) The final refined end product is suitable for use as biodiesel.

- 1.2.8. Heat for the processing of wastes is generated by two onsite natural gas fired boilers, heat recovered from three of the CHP units located at the adjacent Brocklesby AD facility, and via a further CHP boiler unit which is associated with the adjacent Brocklesby AD Facility and dedicated to providing heat and power to the Brocklesby Limited process.
- 1.2.9. The main process building is partitioned to allow different air streams to be managed in different ways. The main process area is fitted with an extraction system with associated carbon filters for odour abatement. Air from the IBC emptying area is extracted and abated for odours prior to release via a caustic scrubber.
- 1.2.10. The esterification plant is fitted with a vapour adsorber to abate emissions from volatile organic compounds (VOC's) arising during operations. Tank waste storage areas associated with the esterification process are fitted with carbon filters for odour abatement of displaced air on filling.
- 1.2.11. The plant operates as an installation under a bespoke Environmental Permit. It is a requirement of the IPPC permitting regime that Operators must apply Best Available Techniques. This report has been written with reference to the documents listed in 1.1.5 above. This report provides an assessment and demonstration of how these standards have been applied at the Brocklesby Limited Facility.
- 1.2.12. Packaging wastes produced at the site are minimal with most inputs being received with bulk delivery arrangements. Packaging wastes generated at the site are stored in a skip prior to dispatch from site.
- 1.2.13. A process flow chart summarising site operations is given in **figure 1** below.

Figure 1 – Process Flow Chart for Brocklesby Limited Site Operations



2. SITE SETTING, SURROUNDING LAND USE AND LOCATION OF RECEPTORS

2.1. Site Setting, Surrounding Land Use and Location of Receptors

- 2.1.1. The site is located at Crosslands Lane, North Cave, East Riding of Yorkshire, HU15 2PG centred on approximate National Grid Reference SE 88152 32201.
- 2.1.2. The site is located in an area characterised by mixed industrial, agricultural and residential use. The underlying geology is characterised by mudstone bedrock overlaid by sandy/clayey superficial drift deposits. The immediate surrounding area has been and continues to be subject to quarrying activities for extraction of sand and gravel aggregates
- 2.1.3. The nearest SSSI to the site is Everthorpe Quarry which is situated approximately 3.3km to the east of the site. The B1230 highway is 400m to the south of the site. There are a number of residential and business premises within 500m of the site to the east and west on the B1230 Newport Road.
- 2.1.4. Site is located on a minor aquifer with high vulnerability. The nearest groundwater abstraction point is approximately 300m to the west of the site. The nearest surface water abstraction point is located over 1km to the east of the site. Local abstractors use water for agricultural and industrial purposes.
- 2.1.5. An **Environmental Risk Assessment** is presented with this application as document reference **HC1676-08** and considers these aspects in more detail.

3. TECHNIQUES FOR POLLUTION CONTROL - WASTE ACCEPTANCE AND STORAGE

3.1. Waste Pre-acceptance

- 3.1.1. Following refurbishment, the site will have the capacity to process up to 225,000 tonnes a year of waste feedstocks. Total storage capacity on site at any one time will increase to a total capacity of 6000m³.
- 3.1.2. All waste feedstocks accepted at the site are subject to the pre-acceptance and acceptance procedures outlined in the operator's **feedstock acceptance procedure**. This procedure is presented with this document as **appendix 1**.
- 3.1.3. Sourcing and selection of feedstocks accepted at the site takes into account the suitability of feedstocks in achieving specified intended outputs for biodiesel, energy generation, and anaerobic digestion. Waste tracking, including a unique reference number, will begin in the pre-acceptance stage.
- 3.1.4. Prior to acceptance of any waste stream, the pre-acceptance assessment will be undertaken as laid out in the feedstock acceptance procedure. This assessment will be subject to ongoing review and update as specified in the procedure.
- 3.1.5. Once a feedstock has been pre-assessed as suitable to be accepted at the site, the operator will undertake the additional period of checks laid out in the feedstock acceptance procedure on initial receipt of waste at the site to verify that the material received is as assessed and agreed at the pre-acceptance stage.
- 3.1.6. The waste pre-acceptance procedures described above that are in place at the Brocklesby Limited site are in accordance with **BAT conclusion 2a**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

3.2. Waste Acceptance Procedures

- 3.2.1. Wastes will be accepted at the site in accordance with the procedures laid out in the operator's feedstock acceptance procedure (appendix 1).
- 3.2.2. As the processing capacity at the site will increase, there will be an increase in vehicle deliveries to the site on a daily basis.
- 3.2.3. The addition of a second weighbridge will allow the operator to implement a 'one way' vehicle flow arrangement with an 'in' and 'out' weighbridge which will allow for quick and efficient turnaround of vehicles.
- 3.2.4. The two 50 tonne weighbridges are supplied by John Maguire Ltd, one for incoming vehicles and are surface mounted weighbridges with separate concrete ramps at each end of each weighbridge and access barriers and call points to main control room.
- 3.2.5. All tankers delivering and removing liquid feedstocks to the site will do so from a single delivery/offtake area in the tanker delivery area immediately adjacent to the new tank farm.
- 3.2.6. This area has been created with impermeable surfacing and a sealed drainage system.
- 3.2.7. The area has sufficient capacity to contain a spill volume equivalent to two whole tankers should they lose their load at the same time.
- 3.2.8. All tanker deliveries to and from the site will be supervised by site staff in accordance with the feedstock acceptance procedure (appendix 1).
- 3.2.9. Any incoming load which is not pre-booked, cannot produce a suitable waste transfer note, or appears to be non-conforming on visual inspection, will not be allowed to enter the site further. If non-conformance is identified after offloading, the quarantine and rejection procedures outlined in the feedstock acceptance procedure will be implemented. Non-conforming loads and actions taken will be recorded within the site Environmental Management System.
- 3.2.10. The site will maintain a tracking system of all records generated during pre-acceptance, acceptance, storage, treatment and off-site removal. Wastes will be identified by a unique reference number and the following details will be recorded:
 - Date;
 - Producer details;
 - Analytical results;
 - Size and nature of load, such as package type; and
 - Treatment route.

- 3.2.11. The tracking system will enable site staff to have knowledge of the following at any one time and in case of emergency:
- Total quantity of waste on site;
 - Breakdown of waste types awaiting treatment;
 - Breakdown of waste types awaiting onward transfer; and
 - Record of the time the waste has been on site.
- 3.2.12. Records will be kept in a secure location, with computer records backed up in an off-site location. Records will be available for inspection by the Environment Agency at any time.
- 3.2.13. All staff involved in waste acceptance will be trained in such procedures.
- 3.2.14. Where conformance sampling and analysis is required, this will be carried out at the onsite lab or at a UKAS accredited laboratory as appropriate.
- 3.2.15. The waste acceptance procedures described above that are in place at the Brocklesby Limited site are in accordance with **BAT conclusion 2b-g**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

3.3. Waste Receipt and Storage

- 3.3.1. Solid wastes accepted at the site will be diverted for offloading and storage in the pre-existing waste reception/processing building. There have been no significant changes to this part of the site. The key change in this area is the installation of a replacement caustic scrubber for abatement of odours arising in the IBC emptying area of the shed.
- 3.3.2. Solid wastes are stored in a 40t total capacity bunded area inside the main process building. In normal working conditions, approximately 20t of material is stored in this area at any one time with an average turnover time of 3 days and a maximum storage time of 7 days prior to processing. Liquid wastes received at the site are processed within 24 hours.
- 3.3.3. Liquid wastes will be received into storage in the new tank farm. The new tank farm consists of sixteen 150 tonne tanks, each 3.8m in diameter and 14.5m in height. There are also four 500 tonne tanks, each 8m in diameter and 10m in height. The tank farm has a total capacity of 4,400 tonnes. The tank farm is used to store incoming wastes as well as intermediate wastes awaiting further processing, final waste materials that are awaiting dispatch for further use/recovery and potentially surface water prior to treatment and release or use within the process.
- 3.3.4. The tank farm is contained in a suitably sized and constructed bund that provides containment for potential spills from tankers during deliveries as well as adequate containment in the event of catastrophic tank failure.
- 3.3.5. The sixteen 150 tonne tanks are re-purposed flat bottomed storage tanks of mild steel construction, manufactured to BS2654, bolted down on concrete plinths.

- 3.3.6. The four 500 tonne tanks are new storage tanks, site built using glass coated steel plates, bolted together using the “Permastore” design. The base ring of the tanks is bolted down on concrete plinths.
- 3.3.7. Tank contents are mixed by pump recirculation of liquid rather than internally mounted mixers. A series of sensors and probes in the tanks continuously monitor level and temperature which can be viewed and controlled by plc via a SCADA interface system located in main control room and manned twenty-four hours a day, seven days a week.
- 3.3.8. There are two points of monitoring and control of tank content level measurement within the tanks. Firstly, a level transmitter with a high-level set point sounds an alarm when the set point is reached. Secondly, a separate level switch system automatically closes the feed valve if the level reaches the highest point and so prevents any further filling of the tank. Both monitoring and control points can be viewed on the SCADA control interface page.
- 3.3.9. **The manufacturer’s specification for the new 500t Permastore tanks** is included with this document as **appendix 2**.
- 3.3.10. **The assessment of suitability of the sixteen 150 tonne re-purposed tanks** as suitable for use at the Brocklesby Limited site is laid out in a letter from the supplier dated 26th March 2021 and is now included with this document as **appendix 3**.
- 3.3.11. A tank thickness test was undertaken following receipt of the tanks at the Brocklesby site to provide further re-assurance of their state of repair and fitness for purpose. The results of the thickness test demonstrate that the tanks are fit for purpose with no areas of significant tank wear and potential weakness identified. Further details of the **thickness test** are provided with this document as **appendix 4**.
- 3.3.12. The tanks have been added to the site asset register and are included in scheduled works for ongoing monitoring, maintenance, and inspection.
- 3.3.13. All pipework connections to the tank are above ground. Process piping is stainless steel and predominantly 80 nominal bores. Steam condensate piping is carbon steel, and water and air galvanised steel. Pipework is labelled to show content and direction of flow.
- 3.3.14. Secondary containment of pipework is achieved by the tank farm bund for pipework sections located in this area, and by additional concrete bunding for sections which pass outside of the bund on route to the process building. Once inside the process building, potential spills from pipework will be contained by the sealed drainage system inside the building. Potential spills from pipework extending from the tank farm to the process building are provided with further containment measures due to the tertiary containment facility at the site.
- 3.3.15. The new tank farm is contained within a new purpose built and designed masonry bund. The design and construction of the bund is in accordance with the requirements of CIRIA 736. This has been verified by a suitably qualified engineer who has provided a sign off report to this effect. The **bund**

construction compliance sign-off report is included in the **Site Containment Review Report** included with this document as **appendix 5**.

- 3.3.16. The bund compliance sign-off report included in appendix 5 provides confirmation of CIRIA 736 compliance with respect to the masonry construction aspect and provides further assessment and verification of the suitability of methodology for sealing pipework penetrations present in the bund.
- 3.3.17. The new bund and associated pipework have been added to the site asset register and are included in scheduled works for ongoing monitoring, maintenance, and inspection.
- 3.3.18. Tankers will make deliveries to and from the tank farm from a dedicated tanker delivery area. This area will be edged by kerbing that will ensure that any spills that occur during offloading are diverted to a sealed drainage system.
- 3.3.19. Spillages and/or surface water generated in the tanker delivery area that enter the drainage system will be routed through a fat trap and then to a sealed drainage sump. The fat trap is constructed of stainless steel, set in concrete, and has a capacity of 1.5m³. The sump is constructed of concrete and has a capacity of 3m³. Liquid in the sump is maintained at a low level below capacity via two pumps, one duty and one standby.
- 3.3.20. Liquid in the drainage sump will be pumped to one of the tanks in the tank farm for storage prior to either release to the surface water system, processing in the plant, or disposal offsite, depending on the circumstances and characteristics of the material. Rate of pumping can be varied given the availability of two pumps, allowing faster movement of material if a larger volume spillage should occur.
- 3.3.21. Drainage collected in the tank farm arising from this area will be tested on a batch basis in order to allow the operator to make a decision as to whether the water is suitable for release to the site's swale.
- 3.3.22. Water will be visually inspected and tested in the site lab prior to release and if the water quality benchmarks laid out are achieved, then release will be undertaken. The operator will carry out visual monitoring checks during the period of time during which the tank is draining down, and additional water quality monitoring checks in the lab will also be undertaken.
- 3.3.23. Surface water arising from roofs and roadways at the wider site is discharged via an oil interceptor to swale. This release point was in place prior to the current variation, although the emission point was not marked on the site plan included in the site permit. The opportunity has been taken to update the site plan to indicate this release point as part of this variation application.
- 3.3.24. The surface water monitoring and discharge procedure for the site has been updated to include the proposed controls for release of surface waters arising from the tanker delivery area.
- 3.3.25. Surface water retained in the tank farm will be sampled and tested as outlined in the amended surface water monitoring procedure. This **surface water benchmarks** that are indicative of

sufficient quality for water to be discharged from the site are included with this document as **appendix 6**.

- 3.3.26. A sample chamber has been included in the design specification for the new tank farm to accommodate the proposed test and release methodology.
- 3.3.27. The sample chamber is a 500 wide x 800 long x 400 deep stainless tank, complete with weir plates, outlet and drain. The tank is surface mounted adjacent to the water retention tanks in the tank farm, and within the kerbed tertiary containment area of the site.
- 3.3.28. It is necessary to generate sample analysis results in quick turnaround times to ensure that any water released is characteristic of the material that has been sampled and that no additions have been made between sampling and positive release. Dispatch of samples to external laboratories will take several days before results can be received, and so this method is not considered sustainable.
- 3.3.29. Therefore, sample analysis will be undertaken to appropriate standards in the onsite laboratory by suitably trained staff.
- 3.3.30. The operator is already competent in the methodology for testing surface waters as this is a current monitoring activity at the site, and the operator has access to onsite laboratory equipment including a bench top spectrophotometer. The spectrophotometer is calibrated in accordance with the manufacturer's specification.
- 3.3.31. The tanker delivery area has been designed to ensure that containment can be achieved in the event of any larger spills. Containment can be achieved if two tankers should collide and lose their loads at the same time. An arrangement of additional containment kerbing around two of the site perimeters will provide an additional degree of tertiary containment at the site.
- 3.3.32. The **containment capacity achieved by the additional kerbing** and total containment capacity at the site taking into account all containment measures available are outlined in the **Site Containment Review Report in appendix 5** to this document.
- 3.3.33. Odours released from displaced air from the new tank farm during filling operations will be passed through a carbon filtration system prior to release to atmosphere.
- 3.3.34. An impact modelling assessment of the potential for odours to impact on local receptors has been carried out and the results are presented as an appendix to document **HC1676-08 Brocklesby Limited Environmental Risk Assessment**.
- 3.3.35. This assessment considers predicted impacts based on the new site layout, pre-existing odour abatement measures, and the proposed newly installed and replacement systems.
- 3.3.36. An appraisal of the BAT compliance of the odour abatement measures at the site can be found in **HC1676-08 Appendix 3 Odour Assessment**.
- 3.3.37. Manufacturer's specifications/data sheets/ PID for new items of equipment to be installed according to the changes made at the site under the current refurbishment are included in this document as **appendix 7 (Odour caustic scrubber PID), appendix 8 (passive vent carbon filter data sheet**

with respect to the new tank farm abatement system) and appendix 9 (carbon media specification for use in abatement system for new tank farm).

- 3.3.38. Odours arising from storage operations at the site will be subject to daily sniff test monitoring as outlined in **HC1676-Odour Management Plan** submitted with this application. Other measures for monitoring and maintenance of abatement equipment is outlined in this plan.
- 3.3.39. Daily inspections will be made of the condition of storage tanks, bunds, pipework and solid waste storage area.
- 3.3.40. Quarterly waste tonnage returns will be made to the Environment Agency as required for regulatory compliance. In the event that no waste has been received on site as a feedstock, a nil return will be made. An ongoing record of total feedstock tonnages will be kept for compliance monitoring.
- 3.3.41. The anticipated average residency times of feedstocks received by road tanker on site prior to use is up to 24 hours. For waste received in IBC's, barrels and skips, material will usually be processed within 3 day and will be retained on site before processing for no more than 7 days maximum.
- 3.3.42. The waste transfer, handling and storage arrangements described above that are in place at the Brocklesby Limited site are in accordance with **BAT conclusions 4 and 5**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

BAT Assessment Statement: The infrastructure and processes and procedures that will be implemented to evaluate and manage incoming feedstocks will be compliant with BAT as outlined in the

1. Environment Agency Sector Guidance Note IPPC S5.06, Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, Issue 5, May 2013;
2. Additional Guidance for the Food and Drink Sector;
3. EC 2005: Reference Document on Best Available Technique in the Slaughter House and Animal By-products Industries;
4. EC 2018: Best Available Techniques (BAT) Reference Document for Waste Treatment;
5. EA, 2020, Consultation Draft. Appropriate Measures for the Biological Treatment of Waste.

4. TECHNIQUES FOR POLLUTION CONTROL - TREATMENT

4.1. Treatment

- 4.1.1. The plant has the capacity to process up to 225,000t of wastes under the new refurbished plant configuration.
- 4.1.2. The overall production/waste processing activities, methodologies and facilities at the site remain unchanged compared to operations at the site prior to the refurbishment, the key changes under this variation being increase capacity and general improvement of operations and facilities.
- 4.1.3. The permitted chemical treatment activities at the site as applied to hazardous wastes in the existing permit are the same activities proposed for treatment of non-hazardous materials under this variation. The operator has requested that the hazardous waste code be removed from the permit since there is no intention to process this material at the site going forward.
- 4.1.4. The two new proposed waste streams are intended to be subject to the currently permitted treatment processes and any individual waste streams identified for potential receipt at the site under these codes will be subject to pre-assessment of suitability in accordance with the waste pre-acceptance procedures outlined in the **Feedstock Acceptance Procedure included here as Appendix 1**.
- 4.1.5. The new waste types to be added to the permit are both included within Appendix B of WRAP's 'Anaerobic Digestate – End of waste criteria for the production and use of quality outputs from Anaerobic Digestion of source-segregated biodegradable waste' and appear on the list of wastes given in the standard rules permits for AD sites.
- 4.1.6. These wastes can therefore be considered to have been 'pre-assessed' as suitable for use in AD and therefore suitable for inclusion in the feedstocks produced at the site for further AD use.
- 4.1.7. The ADQP has restrictions on the wastes that can be accepted under 19 02 10. Only glycerol accepted under this code is permitted under the ADQP. The operator may wish to accept glycerol under this code which may be incorporated into AD soup. In addition to this the operator may wish to accept other wastes under this code that are biodiesel distillation residues that can be blended with other products at the site to go for end uses other than AD feedstock soup. The operator has therefore requested a more generic description for wastes accepted under this code that makes facility for acceptance of both glycerol for AD soup, and other fat/oil-based materials destined for other end uses.
- 4.1.8. The current variation has minimal impact on the treatment processes at the site which remain largely unchanged. Those changes that are proposed as described above are in accordance with BAT conclusions, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

BAT Assessment Statement:

The infrastructure and processes and procedures that will be implemented to manage the treatment process will be compliant with BAT as outlined in

1. Environment Agency Sector Guidance Note IPPC S5.06, Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, Issue 5, May 2013;
2. Additional Guidance for the Food and Drink Sector;
3. EC 2005: Reference Document on Best Available Technique in the Slaughter House and Animal By-products Industries;
4. EC 2018: Best Available Techniques (BAT) Reference Document for Waste Treatment;
5. EA, 2020, Consultation Draft. Appropriate Measures for the Biological Treatment of Waste.

5. TECHNIQUES FOR POLLUTION CONTROL - EMISSIONS

5.1. Point Source Emissions - Water

- 5.1.1. There is one discharge point for surface water arising from the site (W1) and two discharge points to foul sewer, one for domestic sewage, and one under a trade effluent discharge consent with the local water company to discharge boiler blowdown to sewer. The site is fully contained with concrete surfacing with secondary containment installed for external storage tanks and tertiary containment measures installed for the site as a whole. The waste processing has an internal sealed drainage system which allows any spillages to be contained and re-processed.
- 5.1.2. Surface water from the eastern delivery yard area of the site is diverted to a drainage sump which then pumps to an above ground sealed holding tank for use in the process and therefore constitutes a 'rainwater harvesting' function to replace use of mains supply water.
- 5.1.3. Surface water arising from the tanker delivery and new tank farm area is diverted to a sump via a fat trap. Water in the sump is pumped to an above ground tank in the tank farm for either re-processing or controlled release following testing for water quality benchmarks.
- 5.1.4. Surface water from the western area of the site is diverted to the swale at discharge point W1 via an oil interceptor. Water in the swale soaks away to the environment.
- 5.1.5. The surface water system is fitted with an emergency shut off valve located immediately upstream of the Klargest oil intereceptor, that can be closed to allow water to be contained on the site.
- 5.1.6. Water **quality monitoring and sampling** takes place as outlined in the procedure included in this document as **appendix 6**.
- 5.1.7. A copy of the **trade effluent discharge consent** for discharge of boiler blowdown to sewer is included in this document as **appendix 10**.
- 5.1.8. The proposed monitoring procedures described for uncontaminated point source emissions to water are in accordance with **BAT conclusions 6, 7, 19 and 20**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

5.2. Point Source Emissions – Air (Exhaust Emission, VOC's and Odour)

- 5.2.1. There are twelve-point source emissions points to air which make potentially odorous emissions (displaced air from tanks and process buildings), exhaust emissions (the two boilers), and VOC's (the vapour absorber from the esterification process building).
- 5.2.2. The potential for these emissions points to create environmental impacts have been assessed and the findings of these assessments laid out in **HC1676-08 Brocklesby Limited Environmental Risk Assessment**.
- 5.2.3. Measures for monitoring these emissions are outlined in the site's **odour management plan (HC1676-13)** in the case of odour and VOC's, in the site **fugitive emissions plan (HC1676-12)** with

respect to VOC's, and according to the requirements as laid out in the site permit with respect to exhaust emissions to atmosphere.

- 5.2.4. The proposed monitoring measures described that are in place at the Brocklesby Limited site for monitoring of point source emissions to air are in accordance with **BAT conclusion 8**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

5.3. Fugitive Emissions

- 5.3.1. Checking for potential leaks from processing areas and storage tanks will form part of the site's routine inspection for leaks and repair programme, and a methanol detection system linked to the SCADA system is in place in the esterification building. Couplings and valves will be closely monitored; staff are trained to monitor all connection points daily as routine. The risks of emissions to ground, or controlled waters will be limited by the site's surfacing, tertiary containment system and secondary bunding of tanks. In the event of a spillage reference is made to the **Accident Management Plan (HC1676-21)**. The EMS also contains a **Fugitive Emissions Management Plan (HC1676-12)**.
- 5.3.2. A qualitative environmental risk assessment has been produced in line with Environment Agency guidance and this is presented as supporting document reference H1676-08.
- 5.3.3. The proposed measures described that are in place at the Brocklesby Limited site for reduction and management of diffuse emissions to air are in accordance with **BAT conclusion 14**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

5.4. Odour

- 5.4.1. Odour emissions from the site have the potential to be both point source and diffuse. Point source emissions from odour abatement technology will be monitored in line with the Odour Management Plan and the environmental permit.
- 5.4.2. The odour impacts of potential emissions to air have been assessed via an impact modelling assessment and a report of the findings is supplied in **HC1676-08 Appendix 3**. This report concludes that predicted odour concentrations were below the relevant EA odour benchmark level at all receptor locations for all modelling years. Therefore, potential odour emissions from the facility are not considered to be significant.
- 5.4.3. An Odour Management Plan has been produced in line with the requirements of Environment Agency guidance: H4 Odour Management. This is presented as document reference **HC1676-013** in support of this application. The **Odour Management Plan** presents a site wide approach to odour management to ensure there are no adverse impacts from the site as a whole and no unacceptable odours from the abatement point sources.
- 5.4.4. As an installation, the facility is required to meet Best Available Techniques (BAT). In doing so an assessment of potential impacts is made, mitigation measures are put in place to reduce potential impacts and the reduced impacts are then considered as acceptable to meet the requirements of

BAT or further mitigation is needed. Odour impacts have been identified, reduced and assessed. The odour abatement technology installed at the site are in accordance with technology systems that are consistent with BAT.

- 5.4.5. The odour abatement and monitoring measures, and preparation of an odour management plan for the site described above are in accordance with **BAT conclusions 10, 12, and 13**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

5.5. Bioaerosols, Dust and Litter

- 5.5.1. Bioaerosols are not considered to be a significant risk factor at the site as no biological treatment of waste is undertaken, and emissions points are limited and have low potential for releases. A bioaerosol risk assessment has been undertaken and is presented as HC1676-08 Appendix 5.
- 5.5.2. Staff are given training in the need to be vigilant for potential fugitive emissions of dust, fibres, particulates and litter. Measures in place to manage dust and litter that may arise at the site are outlined in the Fugitive Emissions Management Plan. The potential risks will vary with the time of year and any new incoming waste streams, but wastes received are not anticipated to present a significant risk of dust generation. All storage and depackaging will be carried out within the Process building. As the majority of the processing takes place in enclosed areas of the plant, or involves liquid storage, the risks of dust, fibres, particulate and litter release are considered to be low.
- 5.5.3. The measures in place at the Brocklesby Limited site for management of diffuse emissions from the site are in accordance with **BAT conclusion 14**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

5.6. Vermin

- 5.6.1. Vermin are controlled by use of a specialist contractor. Regular visits are carried out by the inspector, when traps are inspected and freshly baited, in accordance with the requirements of the site's APHA approval.
- 5.6.2. The site is checked daily for evidence of pest infestations by the site supervisor and observations are recorded in the site diary. In the event of evidence of infestation, additional support will be commissioned from trained specialist personnel.

5.7. Noise and Light

- 5.7.1. A noise management plan has been developed and is in place in the EMS for the site by way of managing the small risk that is present. The potential impacts of noise from operations at the site has been assessed via a noise impact modelling assessment. The assessment report is provided as **HC1675-08 Appendix 4**.
- 5.7.2. The measures to evaluate and manage noise impacts described above that are in place at the Brocklesby Limited site are in accordance with **BAT conclusions 17 and 18**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste

Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control)
Pinasseau A. et. al. 2018.

- 5.7.3. Light pollution is not considered significant due to the nature of operations, and context of the site.

BAT Assessment Statement:

The infrastructure and processes and procedures that will be implemented to control emissions will be compliant with BAT as outlined in the

1. Environment Agency Sector Guidance Note IPPC S5.06, Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, Issue 5, May 2013;
2. ERP 6.10, 2009, Additional Guidance for the Food and Drink Sector
3. EC 2005: Reference Document on Best Available Technique in the Slaughter House and Animal By-products Industries.
4. EC 2018: Best Available Techniques (BAT) Reference Document for Waste Treatment;
5. EA, 2020, Consultation Draft. Appropriate Measures for the Biological Treatment of Waste.

6. TECHNIQUES FOR POLLUTION CONTROL - MANAGEMENT

6.1. General Management

- 6.1.1. The Brocklesby Limited Facility at North Cave is operated by Brocklesby Limited. The operator maintains a formal controlled Environmental Management System that is designed to ensure:
- that environmental risk and impacts are managed proactively;
 - that all legislative requirements are complied with; and
 - that procedures are in place to enable timely and effective response to environmental incidents should they occur.
- 6.1.2. A **Summary of the Environmental Management System** is presented as **HC1676-04**. Key EMS documents are supplied in support of this application.

6.2. Technical Competence

- 6.2.1. The operator will ensure that the site is attended for the required number of hours by a holder of a suitable WAMITAB award. Cover arrangements will also be established to ensure that the necessary attendance takes place during staff holiday and sick periods.
- 6.2.2. The site staff team includes a Managing Director, full-time site manager (WAMITAB holder), and up to forty-four site operatives. Evidence of the operator's commitment to bring WAMITAB competence in house is presented as document **HC1676-03** with this application, with two in hours staff completing the award in forthcoming weeks, and an intended third person schedule to attend the course within the year.

6.3. Environmental Management

- 6.3.1. The operator has conducted a Qualitative Environmental Risk Assessment (QRA) to determine the significant emissions associated with the site. This assessment has informed the development and content of the site Environmental Management System (EMS).
- 6.3.2. The EMS also includes procedures for reporting, documenting, and investigating incidents, near misses, complaints, and non-compliances.
- 6.3.3. The management system includes procedures for regular maintenance checks/activities on plant machinery and infrastructure to control identified high risk activities, and external and internal audit systems. The site will also carry a supply of critical spares to enable timely response to breakdown and the need for repair.

6.4. Training

- 6.4.1. All staff employed at the site will have defined job descriptions that will set out the skills and competencies required to carry out the required role. These clearly defined roles will be the basis for a staff training needs assessment, which will form the basis of the staff training plan for the site.
- 6.4.2. All staff will receive training that will enable them to understand the regulatory context in which the plant is operating and the impact that their own particular role may have on compliance with the permit. All staff will be trained to develop an awareness of the potential environmental impacts of

the operations on site, and in the reporting procedures for incident and near misses.

- 6.4.3. The training needs/information sharing requirement of contractors visiting the site will be considered within the training needs analysis for the site, and systems set up accordingly to ensure that contractors are equipped with sufficient training and knowledge to undertake their activities on site in a manner that is in line with the operator's systems for management of environmental risk at the site.
- 6.4.4. The establishment of a comprehensive management system as described above at the Brocklesby Limited site is in accordance with **BAT conclusion 1**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018

6.5. Raw Materials

- 6.5.1. The operator has collated a raw materials inventory detailing tonnages of raw materials used on an annual basis. The nature and volumes of materials used on site will be reviewed on an ongoing basis and where possible efficiencies will be made, or changes will be made in the selection of materials used to ensure that low impact options are used wherever possible. This will be included in the management system.
- 6.5.2. A list of the raw materials used at the site, the tonnages stored at any one time, the estimated annual usage, and the storage arrangements is included with this application as HC1676-15.
- 6.5.3. The use of raw materials at the site will be reviewed on at least an annual basis in order to inform ways in which objectives may be set to improve efficiency at the site.
- 6.5.4. The measures described above that are in place at the Brocklesby Limited site for monitoring of annual consumption of raw materials are in accordance with **BAT conclusion 11**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

6.6. Waste Minimisation and Water Usage

- 6.6.1. Monitoring and review of wastes produced, water usage and energy usage will be carried out on at least an annual basis in order to identify areas where efficiencies can be made.
- 6.6.2. Whilst undertaking the refurbishment of the site, the operator has taken the opportunity to install a series of resource efficiency measures. The operator has joined a Climate Change Agreement with The Chemical Industry Association (CIABATA). 100Kw solar panels have been installed on the existing office roof and new building and a new gas line has been Installed to allow natural gas to be used as a fuel to fire the site's two boilers (replacement to oil used previously).
- 6.6.3. The boilers themselves have been replace with two new efficient units, which are installed with latest technology to manage operations including economisers within the chimney stacks to recover heat and a Reverse Osmosis plant to pre-treat mains water to reduce boiler blowdown from 15% to 0.2%

- 6.6.4. Facilities for rainwater harvesting for use within the process have also been installed, and the operator will continue to import heat and power from the biogas fired CHP boiler associated with the adjacent AD site.
- 6.6.5. Improved resource monitoring measures have also been installed to allow the operator to monitor and review ongoing usage as a basis for identifying further efficiencies that might be achieved.
- 6.6.6. The measures described above that are in place at the Brocklesby Limited site for monitoring of annual consumption of water and wastes produced are in accordance with **BAT conclusion 11**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

6.7. Cleaning

- 6.7.1. Brocklesby Limited is a food waste handling plant, rather than a food production plant, however, the operator aspires to achieve high standards of cleanliness at the site in accordance with the requirements of the APHA approval. Brocklesby Limited do not have any fully automated Clean in Place technology, however, all cleaning and sanitising is carried out within a 24 hour period 7 days a week. The schedule is checked and signed off by supervisors and management. Copies are then stored for audit and compliance purposes. Periodic images are taken of the site and used to continuously improve standards.
- 6.7.2. All areas of the factory are addressed for cleanliness twice in 24 hours. The hygiene assessment involves visual inspection, followed by jet washing and/or disinfection. The degree to which water use is required will vary with the nature of the waste treated in that particular shift. Where possible cleaning waters are recirculated within the process. Cleaning is also a requirement of the site's APHA approval.

6.8. Waste Recovery or Disposal

- 6.8.1. The operator intends to recover the majority of incoming wastes for use as feedstock to anaerobic digestion plants, or as oils for secondary fuel. There will be a minimal amount of residual packaging waste, the majority of which will be sent for recycling operations under R03, R04 or R04 with only a small proportion going to landfill for disposal. Destination of process residues will be reviewed on an annual basis as a means of aiding identification of further efficiency measures that might be implemented.
- 6.8.2. The measures described above that are in place at the Brocklesby Limited site for monitoring of annual management of process residues produced are in accordance with **BAT conclusions 11, 22 and 24**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

6.9. Accidents and Emergencies

- 6.9.1. All staff will receive training in the implementation of the site's Emergency Action Plan in relation to fires, personal injury and environmental accidents and incidents. An **Accident Management Plan** is incorporated within the EMS and included with this application as **HC1676-21**.

- 6.9.2. All staff will also be trained in awareness of the HACCP risk assessment contained within the EMS.
- 6.9.3. There is currently no requirement for the development and implementation of a fire prevention plan within the site permit. However, the operator is in the process of developing fire prevention measures for the site incorporating recommendations arising from the post incident review following the fire at the site in 2019.
- 6.9.4. These measures cannot be finalised until development works at the site have been completed, and updated DSEAR and fire risk assessments are carried out based on the new plant configuration.
- 6.9.5. The new measures will be finalised and entered into the operator's management system once these assessments can be updated and taken into account.
- 6.9.6. The measures described above for development of an accident management plan for the Brocklesby Limited site are in accordance with **BAT conclusion 21**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

6.10. Noise

- 6.10.1. The EMS contains a **Noise Management Plan (HC1676-14)**.
- 6.10.2. The impact of the change in operations as a result of the site refurbishment has been assessed and it has been found that potential impacts are within acceptable limits.

6.11. Site Condition and Closure

- 6.11.1. The operator has a site condition report that provides a record of baseline conditions and changes at the site during operations. Changes/relevant events/incidents impacting on the characteristics of the site are recorded on an ongoing basis throughout the life of the plant. These records will be used this report as the basis of any detailed plan, or requirement for specific measures that may be needed to return the site to a fit state at the point of decommissioning.
- 6.11.2. Site investigation survey work was undertaken prior to construction of new infrastructure. This report and data has been recorded in the EMS with the site condition report.
- 6.11.3. The operator has a Closure and Decommissioning Programme in the EMS outlining the measures that will be carried out in the event of site closure to ensure that the site is left in a state that addresses any subsequent risk to the environment arising from this process.
- 6.11.4. The measures described above that are in place at the Brocklesby Limited site for establishing baseline conditions, monitoring site condition, and for managing potential impacts on decommissioning are in accordance with **BAT conclusion 1**, as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

BAT Assessment Statement:

The infrastructure and processes and procedures that will be implemented to apply suitable management techniques at the site will be compliant with BAT as outlined in the

1. Environment Agency Sector Guidance Note IPPC S5.06, Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, Issue 5, May 2013;
2. ERP 6.10, 2009, Additional Guidance for the Food and Drink Sector
3. EC 2005: Reference Document on Best Available Technique in the Slaughter House and Animal By-products Industries.
4. EC 2018: Best Available Techniques (BAT) Reference Document for Waste Treatment;
5. EA, 2020, Consultation Draft. Appropriate Measures for the Biological Treatment of Waste.

7. TECHNIQUES FOR POLLUTION CONTROL - ENERGY, MATERIALS AND WASTE

7.1. Management

- 7.1.1. The Brocklesby Limited facility is an installation and as such the operator will need to comply with permit conditions that require measures to be taken to ensure that energy is used efficiently. The operator will also need to carry out four yearly reviews to continually identify potential savings in energy efficiency on site.
- 7.1.2. The operator maintains a record of all fuel usage at the facility as monthly totals. The use of energy is continually reviewed for potential efficiencies aided by the improved monitoring measures installed at the site as part of the current site refurbishment.

7.2. Measures for Improvement of Energy Efficiency

- 7.2.1. The site staff will conduct daily process checks to help ensure the efficient operation of the plant. This includes visual inspection of motors/engines/tanks/ for signs of leaks, or wear and tear; visual inspection of connecting pipework for signs of leakage and general lubrication checks.
- 7.2.2. Insulation will be provided where appropriate to minimise heat loss. It is company policy to maintain all plant in good working order to ensure operations are as fuel efficient as possible.
- 7.2.3. The operator has opted for new plant design where the tanks do not require insulation.
- 7.2.4. The liquid in the tanks will be stored at lower temperatures than was previously the case and so insulation will not be required. Tank contents will be heated via a heat exchange system as the material is pumped from the tanks into the process. In this way the material is heated on an 'as needs basis at the point of processing rather than heating the content whilst in storage and therefore needing to retain heat until ready for use.
- 7.2.5. These measures allow the operator to manage risk and is also a significant energy efficiency benefit.
- 7.2.6. The operator will continue to develop an energy efficiency plan, which will monitor energy usage and the need for equipment improvements which may be required over the lifetime of the plant to maintain or improve energy efficiency. Estimates will be made of the CO₂ savings that are made

with any improvements to the plant as part of the operator's membership of the Climate Change Agreement.

7.3. Breakdown of Energy Used and Generated

- 7.3.1. The Brocklesby Limited facility maintains a record of all fuel usage at the facility as monthly totals. The main energy sources are electricity, gas and diesel.
- 7.3.2. Further assessment of the primary emissions from the site is described in Section 5 of this document.

7.4. Raw Materials

- 7.4.1. Raw materials used in the process are listed in **HC1676-15**. The principle of the operation is to take materials that would otherwise be discarded and generate fuel and feedstocks for anaerobic digestion.

7.5. Measures to Avoid Waste Production

- 7.5.1. Detailed waste returns for the site show that any waste derived is separated in to useable sources for onward recycling/reclamation. Annual waste returns demonstrate that less than a small proportion of wastes leaving site are destined for disposal.
- 7.5.2. The measures described above that are in place at the Brocklesby Limited site are in accordance with **BAT conclusions 11, 22 and 23** as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.

8. TECHNIQUES FOR POLLUTION CONTROL - MONITORING

8.1. Monitoring Details

8.1.1. The Environmental Management System outlines the schedule of monitoring relating to the following areas:

- Odour monitoring, in line with the Odour Management Plan;
- Monitoring of drainage arrangements and surface water quality;
- Ongoing monitoring of feedstock quality/compliance with agreements/incoming feedstocks procedure;
- Monitoring of the quality of processed materials for onward anaerobic digestion;
- Monitoring of energy and raw material usage;
- Annual reporting to the Environment Agency;
- Quarterly waste returns reporting to the Environment Agency;
- Ongoing process monitoring;
- Monitoring of maintenance issues/infrastructure such as bund surfacing, sumps and collection systems etc;
- Ongoing monitoring and review of complaints and incidents occurring on site;
- Ongoing monitoring of the impact of operations on the site, via establishment of baselines in the site condition report and collection of data regarding impact of site operations for the life of the site; and
- Monthly pest control.

8.2. Odour

8.2.1. Measures for monitoring of odours are outlined in the site **odour management plan (HC1676-13)**.

8.3. Air Quality

8.3.1. The current Environmental Permit does not require monitoring of emissions to air from the site's two boilers.

8.4. Surface Water Quality

8.4.1. The updated schedule of surface water benchmark monitoring point schedule is included in this document as appendix 6.

9. EMISSION BENCHMARKS

9.1. Emission Benchmarks

- 9.1.1. In line with the requirements of S5.06 the nature, quantities and sources of foreseeable emissions has been initially assessed in the **Qualitative Environmental Risk Assessment**, document reference **HC1676-08**.
- 9.1.2. The principal emissions are releases to air from the stacks of the boilers and emissions from odour abatement equipment. An updated Air Quality Assessment has been undertaken to confirm that emissions are acceptable and fall below the air quality benchmarks. The two new boilers will fall under the requirements of the Medium Combustion Plant Directive and will meet the emissions limits laid out according to this requirement.
- 9.1.3. The Habitats Directive requires consideration of the location of any sites designated under the Directive which fall within a 10km radius of a site which has air quality emissions. The Air Quality Assessment provides assessment of the impact on habitats in the vicinity of the site.
- 9.1.4. Monitoring of clean surface water runoff is by visual assessment of oil, grease and chemical assessment for benchmarks that have been set in accordance with monitoring frequencies and AEL's outlined in **BAT 7** and **BAT 20**.
- 9.1.5. Odour abatement equipment is monitored as outlined in the odour management plan for the site for impacts beyond the site boundary.
- 9.1.6. There are no other emissions from the site which require assessment against sector-specific benchmarks.

10. IMPACT

10.1. Impact Assessment

- 10.1.1. The operator has carried out an assessment of the potential receptors to the site as described in Section 2. The closest receptor is the adjacent Brocklesby Biogas AD Facility to the north. This receives feedstocks processed through the Brocklesby facility. The two sites will work in conjunction with each other.
- 10.1.2. There are a number of other businesses and residential receptors surrounding the site, from 150m of the site boundary.
- 10.1.3. Impact modelling assessments have been undertaken to predict potential impacts arising from the site refurbishment and increased processing capacity.
- 10.1.4. These assessments have included potential impacts from noise, emissions to air, and odours. A qualitative assessment of the potential impacts from bioaerosols has also been carried out.
- 10.1.5. A **Qualitative Environmental Risk Assessment** is presented with this application as document reference **HC1676-08**. The impact modelling assessments are presented as appendices to this document.
- 10.1.6. The site operates on a fully contained basis, so there are no perceived risks of uncontrolled emissions to controlled waters. Water quality benchmarks for discharged water are included in this application and additional tertiary containment measures have been installed at the site to provide containment in the event of catastrophic incidents.

10.2. Habitats Directive

- 10.2.1. To meet the requirements of the Habitats Directive protected sites within 10km of an installation with emissions to air must be identified and addressed. These sites are:
 - Ramsar sites;
 - Special areas of conservation (SACs);
 - Special Protection Areas (SPAs);
 - Marine Protection Areas (MPAs);
- 10.2.2. Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar site within critical distances of the site, and has been considered in the air quality impact assessment.

10.3. Countryside and Rights of Way Act

- 10.3.1. In accordance with the Countryside and Rights of Way Act (CRoW), sites within 2km must be considered. The nearest SSSI is situated approximately 3.3km to the east of the site and therefore, no further assessment of impacts is required.

10.4. Local Wildlife Sites

- 10.4.1. Several local wildlife sites (LWS) have been identified that have been considered within the air quality impact assessment. These sites are North Cave Wetlands Local Wildlife Site (LWS) and North Cave Fish Pond LWS.
- 10.4.2. The assessment results predict that emissions from the site will not impact significantly affect existing conditions at any designation.

10.5. Assessment of Changes

- 10.5.1. Given the nature of site changes the site, potential impacts have been assessed, mitigation measures implemented in accordance with BAT, and the site Environmental Management System reviewed and updated to support these changes. As such, it is considered that impacts to potential receptors are minimised. A summary of the current **EMS framework** is submitted with this application as **HC1676-04**. The management system incorporates all the requirements outlined in **BAT 1**.
- 10.5.2. An updated emissions points plan has been prepared as part of the site revised risk assessment and the various wastewater and waste gas streams associated with each emissions point identified. This updated plan is submitted with this application as **HC1676-05**. Measures for control of these waste streams have been provided for in the revised EMS and are outlined in this document and in the wider application. Identification of these waste water and gas streams within the EMS is in accordance with **BAT 3**.

BAT Assessment Statement:

All impact assessment modelling conducted has demonstrated that potential impacts can be managed within acceptable levels within the current proposals.

The subsequent amended and updated site EMS is in accordance with **BAT conclusions 1 and 3** as outlined in EC JRC Science for Policy Report Best Available Techniques (BAT) Reference Document for Waste Treatment, Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) Pinasseau A. et. al. 2018.



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