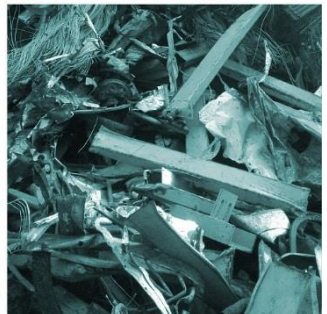
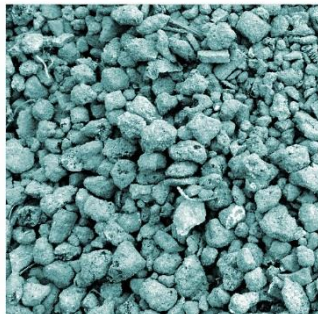
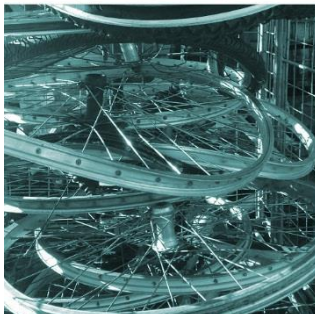
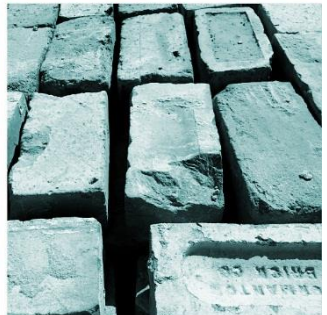
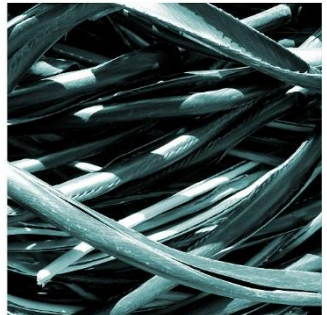
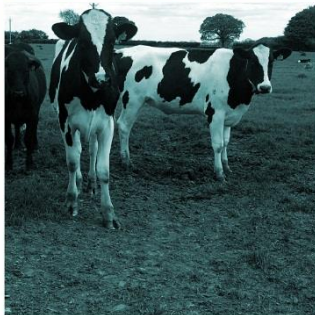
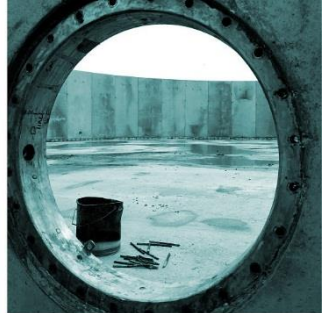


# BIO DYNAMIC UK LIMITED PERMIT VARIATION APPLICATION

Technical Description of Waste Storage, Treatment and  
Transfer Operation

June 2023



Client: Bio Dynamic UK Limited  
Document Reference: HC1677-32

# REPORT SCHEDULE

**Operator:** Bio Dynamic UK Limited

**Client:** Bio Dynamic UK Limited

**Project Title:** Bio Dynamic UK Limited Permit Variation Application

**Document Title:** Technical Description of Waste Storage, Treatment and Transfer Operation

**Document Reference:** HC1677-32

**Report Status:** Final V1.0

**Project Director:** Joanna Holland

**Project Team:** Jo Chapman

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REVISION HISTORY	DATE	COMMENTS	APPROVED
Final Version 1.0	6 <sup>th</sup> June 2023	Additional Information for Duly Making of Application	Maxwell Bagnall

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# 1. INTRODUCTION

## 1.1. Background

- 1.1.1. A permit application has been submitted with respect to the variation of Environmental Permit EPR/DP3935ER in the name of Bio Dynamic UK Limited.
- 1.1.2. The operator's reference for this application is HC1677, and a number of documents have previously been submitted to the Environment Agency in support of this application.
- 1.1.3. One of the changes requested in the permit variation application is for the addition of a new waste storage, treatment and transfer activity at the site.
- 1.1.4. On 31<sup>st</sup> May 2023 the operator received a request for additional information about this activity to allow duly making of the permit application.
- 1.1.5. In the 'Not Duly Made Letter' received, the Environment Agency lists a number of requests. We now seek to provide a response to several of these requests through provision of this additional document which provides a technical overview of the intended activity.
- 1.1.6. This document is therefore submitted in response to items 3 and 4 of the 'Not Duly Made Letter'.
- 1.1.7. These items are as follows.

- |   |
|---|
| <p>3) <u>Application Form Part C2.5 1F</u><br/><u>HC1677-02 Summary of changes- Add waste treatment and transfer station activity</u><br/><i>Provide a full detailed description of the proposed waste operation. This must include:</i></p> <ul style="list-style-type: none"><li>• <i>List associated waste codes</i></li><li>• <i>The location and flow of this activity</i></li><li>• <i>Revised process flow diagrams ( HC1677-14a,b)</i></li></ul> <p>4) <u>Application form Summary of management system HC1677-05</u></p> <ul style="list-style-type: none"><li>• <i>List of the management plans associated with the waste transfer and treatment activity</i></li><li>• <i>Update all associated plans with the waste transfer and treatment activity</i></li></ul> |
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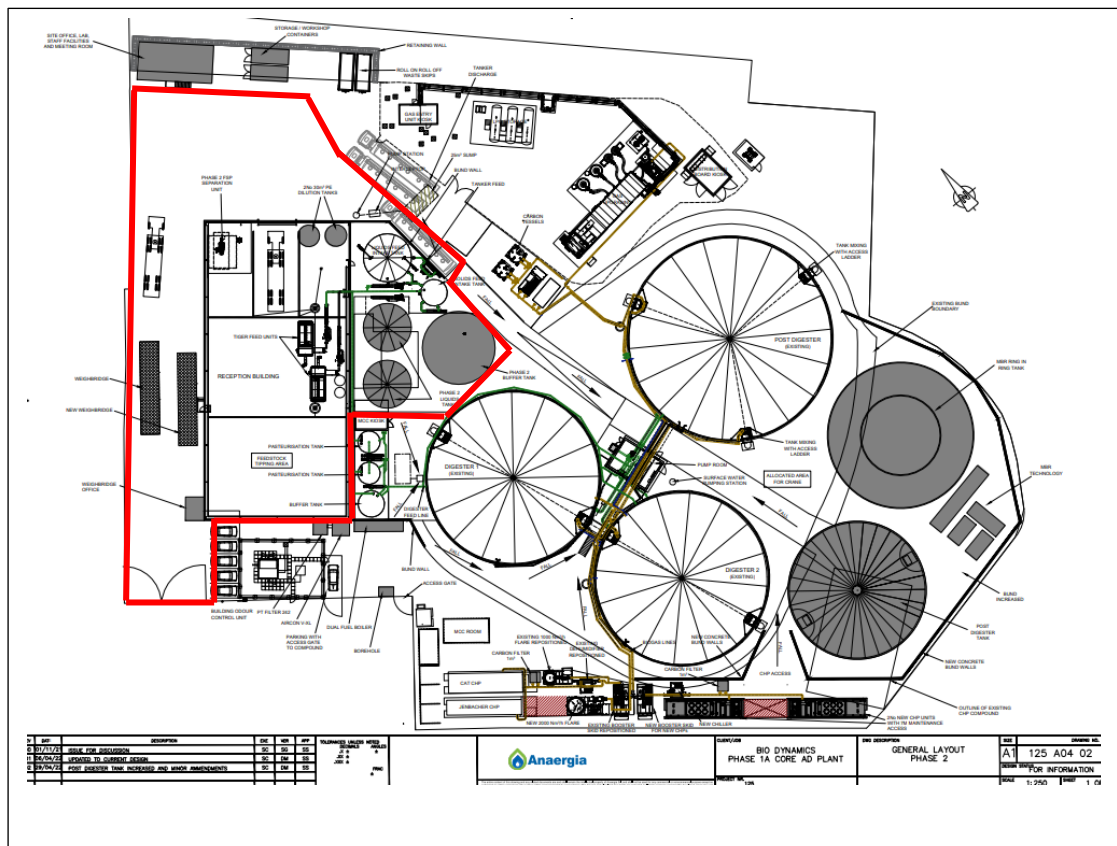
## 2. DESCRIPTION OF ACTIVITY SHOWING LOCATION AND FLOW

### 2.1. Storage, Treatment and Transfer Activity

- 2.1.1. The Bio Dynamic UK Limited AD facility at Private Road Number 4, Colwick Industrial Estate, Colwick, Nottingham, NG4 2JT is an AD installation operating under Environmental Permit EPR/DP3935ER.
- 2.1.2. The plant currently has the facility to accept solid and liquid wastes for storage and treatment prior to processing in the AD biogas facility.
- 2.1.3. Incoming liquid wastes are delivered by tanker directly to liquid waste reception tanks, and solid wastes are tipped in a waste reception building for short term storage prior to physical/mechanical pre-treatment by de-packaging/shredding/macerating and blending with other wastes to form a pumpable slurry.
- 2.1.4. Details of the waste reception building and facilities for acceptance, storage and treatment of wastes have been outlined in HC1677-11 Measures to Demonstrate BAT, Section 3 Feedstock Acceptance Procedures.
- 2.1.5. A diagram of the waste reception building has been provided as document HC1677-06e.
- 2.1.6. A site layout plan which shows the location of the weighbridge, waste reception building, and liquid waste reception tanks has been provided as HC1677-06d.
- 2.1.7. Following variation of the permit, wastes accepted at the site may be passed through to the AD process for recovery or may be exported off site via tanker for use as a feedstock at other AD facilities.
- 2.1.8. The operator does not intend to provide segregated storage and handling facilities for wastes intended for the two different uses, and so wastes for both end uses will be received, stored and processed in the same way.
- 2.1.9. Bio Dynamic UK Limited is a certified producer of PAS110 digestate, and as such the wastes accepted at the site must be in accordance with the ADQP and PAS110 standard.
- 2.1.10. Bio Dynamic UK Limited operate according to an APHA approval and as such must ensure that wastes accepted and handled at the site are in accordance with the requirements of the APHA approval. The current APHA approval applies to wastes brought to site both for treatment in the AD biogas plant, and for offsite transfer to other AD facilities.
- 2.1.11. Wastes accepted at the site that are transferred offsite for use in other AD processes following storage and treatment at the Bio Dynamic site are highly likely to need to meet the same standards, as the majority of food waste AD plant operators seek PAS110 certification and will be operating to the same APHA requirements.
- 2.1.12. The operator therefore intends to apply the same standards, controls, and management systems relating to waste pre-acceptance, waste acceptance, and waste pre-treatment and storage to all waste that is accepted at the site.

- 2.1.13. The list of wastes to be accepted for offsite transfer therefore needs to mirror those that are listed for acceptance and treatment in the AD operation. The list of wastes (as they currently appear on the AD activity permit) are provided in Appendix 1 of this document.
- 2.1.14. The relevant emissions points at the site relating to the activity are therefore those that relate to the general waste reception, storage and pre-treatment activities.
- 2.1.15. These two point-source emissions are those listed as A15 (the stack from the odour abatement unit that serves the extracted air from the waste reception building) and A19, the vent from the odour abatement facility intended to abate displaced air arising from the liquid waste reception/storage facilities. These emissions points can be seen on HC1677-06a Site Emissions Points Plan.
- 2.1.16. For clarity, the areas of the site that will be used for reception, storage, de-packaging, shredding, maceration and blending of wastes intended for further transfer to other AD sites or use in the onsite AD facility are shown by the red line on the annotated version of HC1677-06d Site General Layout Plan in Figure 1 below.

**Figure 1 - HC1677-06d Site General Layout Plan - Area Highlighted in Red Shows Areas of the Site Used for Waste Reception, Storage, De-packaging, Shredding, Maceration and Blending.**



2.1.17. Figure 2 below provides an annotated sketch of the flow of activities through the highlighted areas of the site.

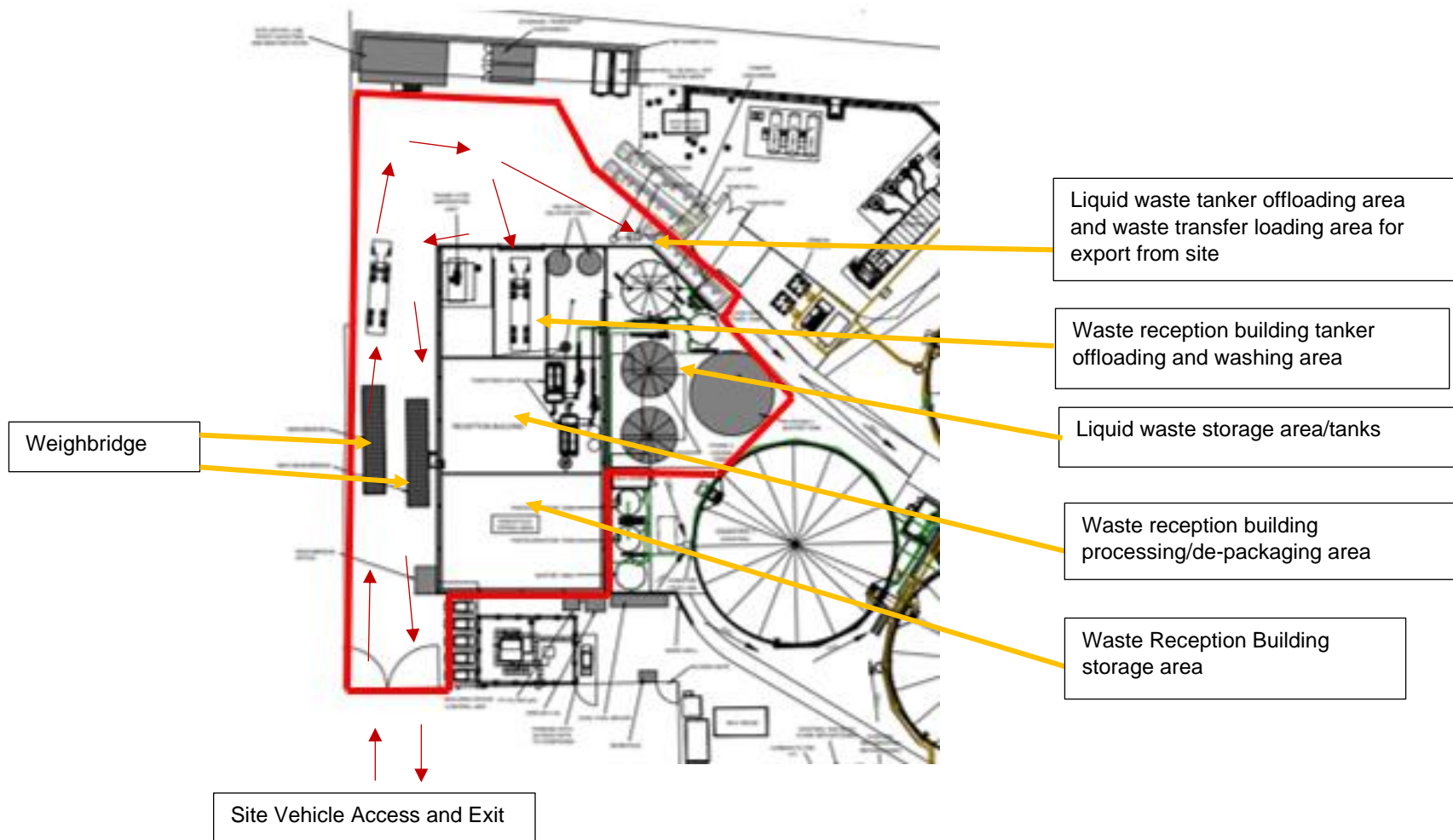


Figure 2 -Annotated Sketch of Activity Flows for Waste Reception, Storage, Treatment and Transfer Activity

- 2.1.18. The previously submitted version of the simple process flow for site operations submitted as HC1677-14b reflects the arrangements shown in the sketch in Figure 2 above. The section of the diagram showing process steps 2, 3, 4, 4a and 4b shown on the second cell on the process flow indicate the waste transfer element from the site activities for onward transfer to AD.
- 2.1.19. Waste destined for transfer to other AD operations following storage and treatment are subject to steps 1, 2, 3, 4, 4a and 4b as shown on the simple process flow diagram (HC1677-14b).



### 3. MANagementsystems

#### 3.1. Summary of Management Systems

- 3.1.1. Wastes accepted, stored and processed at the site destined for treatment in the onsite AD process, and for offsite transfer to third party AD processes are subject to the same pre-acceptance, acceptance, storage, handling, and treatment processes and standards.
- 3.1.2. As a result, the management systems in place that outline the pre-acceptance, acceptance, storage and processing procedures and standards are the same for the two activities and controlled under a single management system for the common activities involved.
- 3.1.3. A summary of the current management system has been supplied previously in document reference HC1677-05 Summary of Management System and further details of specific systems in HC1677-11 Measures to Demonstrate BAT are also provided.
- 3.1.4. The list of management systems provided in HC1677-05 is provided here and highlighted in yellow are the management systems that provide necessary instruction and control for the pre-acceptance, acceptance, storage and pre-processing of wastes for use in the AD process and for the pre-acceptance, acceptance, storage and processing of wastes that will be transferred offsite for use in other AD plants. These are common systems to both activities as the two processes are identical.

**Table 1 – Management Systems and Plans Relating to Waste Storage, Treatment and Transfer Activity (highlighted in yellow)**

**DOCUMENTS AND RECORDS**

<b>OPS</b>	<b>Operations</b>	<b>SOP</b>	<b>Standard operating procedures</b>
OPS BIO001	Daily cleaning & inspections	SOP BIO001	Pre-acceptance waste assessment
OPS BIO002	Preventative maintenance plan	SOP BIO002	Waste deliveries
OPS BIO003	Digester tanks – Weekly visual checks	SOP BIO003	Inspecting waste deliveries
OPS BIO004	Waste reception building – Weekly visual checks	SOP BIO004	Rejecting & quarantining waste deliveries
OPS BIO005	Odour control units – Daily visual checks	SOP BIO005	Cleaning & inspecting waste delivery vehicles
OPS BIO006	Control room – Weekly visual checks	SOP BIO006	Cleaning & inspecting red zone site & equipment
OPS BIO007	Power island – Weekly visual checks	SOP BIO007	Cleaning & disinfection after handling ABPR cat 1/cat 2 material
OPS BIO008	N/A	SOP BIO008	Hygiene
OPS BIO009	N/A	SOP BIO009	Vermin control
OPS BIO010	Training record: Standard operating procedures	SOP BIO010	Power failure during a waste delivery
OPS BIO011	Training record: Risk assessments	SOP BIO011	De-packaging & pre-treating solid waste deliveries
OPS BIO012	Attendance record: Technically competent manager	SOP BIO012	Liquid waste/sludge deliveries
OPS BIO013	Roles & responsibilities: Technical Director	SOP BIO013	Odour control units – Visual checks & maintenance
OPS BIO014	Roles & responsibilities: Compliance Manager	SOP BIO014	Sampling pasteurised material for E coli analysis
OPS BIO015	Roles & responsibilities: Site Manager	SOP BIO015	Sampling digestate for salmonella analysis
OPS BIO016	Roles & responsibilities: Maintenance Manager	SOP BIO016	Checking ABPR pathogen analysis results
OPS BIO017	Roles & responsibilities: Site Operative	SOP BIO017	Digester tanks – Visual checks & maintenance
OPS BIO019	Pre-acceptance waste register	SOP BIO018	Waste transfer information
OPS BIO020	Waste pre-acceptance information	SOP BIO019	Visitors on site
OPS BIO021	Waste transfer information	SOP BIO020	Contractors on site
OPS BIO022	Exporting & importing wastes during exceptional operations	SOP BIO021	Exporting digestate
OPS BIO023	Rejected waste register	SOP BIO022	Exporting & importing wastes during exceptional operations
	Weighbridge tickets/Waste transfer notes	SOP BIO023	Waste reception building - Visual checks & maintenance
	Equipment manuals	SOP BIO024	Control room - Visual checks & maintenance
	Calibration certificates	SOP BIO025	Power island - Visual checks & maintenance
	Training records: External training	SOP BIO026	Quarterly waste returns
	SCADA process data	SOP BIO027	Baling rejected plastics for export
		SOP BIO028	Sampling digestate for nutrient analysis

Operational and regulatory documents and records held in the Site Office, kept as paper and/or electronic copies.

EA	Environment Agency
EPR/DP3935 ER	Environmental Permit
EA BIO001	Environmental management system
EA BIO002	Odour management plan
EA BIO003	Accident management plan
EA BIO004	Monitoring plan
EA BIO005	Monitoring: Daily odour sniff tests
EA BIO006	Monitoring: Off-site odour sniff tests
EA BIO007	Monitoring: Odour complaint report
EA BIO008	Odour management: Agreement to take waste for odour control
EA BIO009	Complaint record
EA BIO010	Non-conformance record
EA BIO011	Accident & incident record
EA BIO012	Digestate nutrients analysis request form
EA BIO013	Digestate nutrients sample register
	Pre-acceptance waste sample analysis results
	Emissions monitoring results
	CAR forms

H&S	Health and Safety
H&S BIO001	Sign-in register
H&S BIO002	Induction information: Visitors on site
H&S BIO003	Induction information: Contractors on site
H&S BIO004	Fire safety plan
H&S BIO005	PPE register
H&S BIO006	Accident, incident & near miss report
COSHH BIO00X	COSHH risk assessments
MSDS BIO00X	Material safety data sheets
RA BIO00X	Risk assessments
	Fire risk assessment
	DSEAR assessment
	HAZOP assessment

APHA	Animal and Plant Health Agency
32/137/8004/A BP/BIO	ABPR Approval Notice
AH BIO001	ABPR01 Supporting information
AH BIO002	HACCP plan
AH BIO003	HACCP verification report (ABPR validation only)
AH BIO004	ABPR pathogen analysis sample register
AH SCI003	ABPR pathogen analysis request form
AH SCI004	ABPR pathogen analysis results
	SCADA pasteurisation reports
	Vermin inspection reports
	Commercial documents

- 3.1.5. A number of these documents have been submitted as appendices to document HC1677-11 Measures Demonstrate BAT and form part of the BAT assessment relating to the variation. Appendices 1, 1a, and 2a-c are documents relating to waste pre-acceptance and acceptance which apply to waste received at the site for both activities (onsite AD feedstock and transfer offsite for AD feedstock). Appendix 13 of the BAT assessment outlines the specification for the new odour abatement systems at the site that site that control emissions from activities in the waste reception area of the site.
- 3.1.6. Documents HC1677-17 Fugitive Emissions Management Plan, HC1677-18 Odour Management Plan, and HC1677-19 Noise Management Plan have been previously submitted. These documents detail measures to be implemented across the whole site and all of its activities and include consideration of the waste storage treatment and transfer activity. No further update is needed to these documents in this respect. The Environmental Risk Assessment submitted (HC1677-08) also makes consideration of the waste storage, treatment and transfer activity.



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