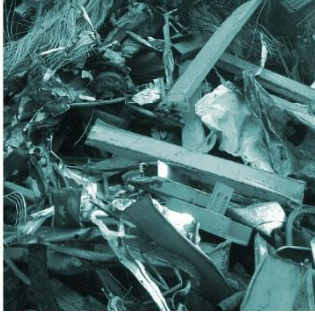
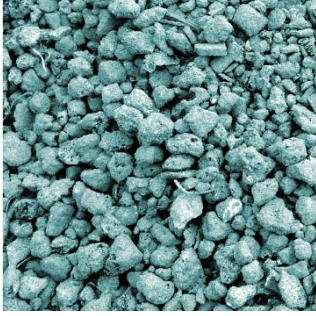
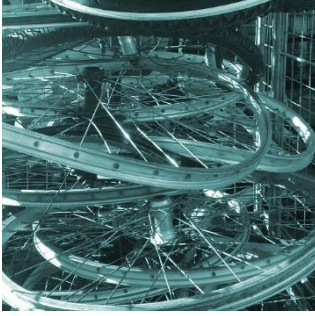
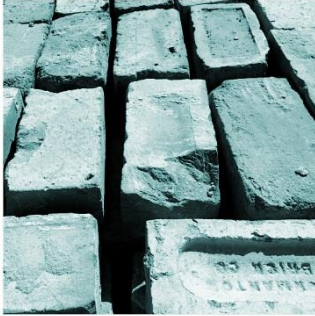
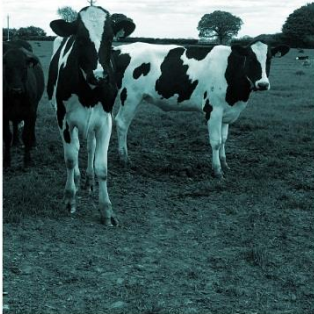


# BIO DYNAMIC UK LIMITED PERMIT VARIATION APPLICATION

Point Source Emissions

July 2022



Client: Bio Dynamic UK Limited  
Document Reference: HC1677-10

## REPORT SCHEDULE

**Operator:** Bio Dynamic UK Limited

**Client:** Bio Dynamic UK Limited

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

**Document Title:** Point Source Emissions

**Document Reference:** HC1677-10

**Report Status:** Final 1.1

**Project Director:** Joanna Holland

**Project Manager:** Jo Chapman

AUTHOR	DATE
Jo Chapman	15 <sup>th</sup> July 2022
REVIEWER	DATE
Joanna Holland	13 <sup>th</sup> August 2022
APPROVED	
Joanna Holland	13 <sup>th</sup> August 2022

REVISION HISTORY	DATE	COMMENTS	APPROVED
Final Version 1.0	19 <sup>th</sup> August 2022	For Submission to EA	Maxwell Bagnall
Final Version 1.1	24 <sup>th</sup> April 2023	Update site configuration	Maxwell Bagnall

### DISCLAIMER

This report has been prepared by H&C Consultancy Ltd with all reasonable skill, care and diligence. It has been prepared in accordance with instructions from the client and within the terms and conditions agreed with the client. The report is based on information provided by the Client and our professional judgment at the time this report was prepared.

The report presents H&C Consultancy's professional opinion and no warranty, expressed or implied, is made.

This report is for the sole use of The Client, and H&C Consultancy Ltd shall not be held responsible for any user of the report or its content for any other purpose other than that for which it was prepared and provided to the client. H&C Consultancy accepts no liability to third parties.



# CONTENTS

1. Part C3.....1

# 1. FORM PART C3

## 1.1. List of Emission Points

1.1.1. Application Form C3 Section 2 requires that all emissions to air, water and land are listed. Table 2 below provides the list of emissions as required. All emissions points referred to are shown on HC1677-06a – site layout, permit boundary and emissions point plan.

**Table 2 – Emissions (releases)**

Emission point reference and location	Source	Parameter	Quantity	Unit
<b>Point source emissions to air</b>				
Emission point reference and location	Source	Parameter	Quantity	Unit
<b>A1-Engine Exhaust CHP Engine 1</b>	CHP Engine 1 (pre-existing 4.93 MWth inputs Caterpillar CHP engine, 2026kW outputs)	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	<500	mg/m <sup>3</sup>
		Sulphur Dioxide (until 31 <sup>st</sup> Dec 2029)	<350	mg/m <sup>3</sup>
		Sulphur Dioxide (from 1 <sup>st</sup> Jan 2030)	<162	mg/m <sup>3</sup>
		Carbon Monoxide	<1400	mg/m <sup>3</sup>
		Total VOC's	No limit set	
<b>A2- Engine Exhaust CHP Engine 2</b>	CHP Engine 2 (pre-existing 1.24 MWth inputs Jenbacher CHP engine, 499kW outputs)	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	<500	mg/m <sup>3</sup>
		Sulphur Dioxide (until 31 <sup>st</sup> Dec 2029)	<350	mg/m <sup>3</sup>

Emission point reference and location	Source	Parameter	Quantity	Unit
		Sulphur Dioxide (from 1 <sup>st</sup> Jan 2030)	<162	mg/m <sup>3</sup>
		Carbon Monoxide	<1400	mg/m <sup>3</sup>
		Total VOC's	No limit set	
<b>A3-</b> Emergency Flare Stack 01	Emergency Flare 1 (pre-existing)	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	<150	mg/m <sup>3</sup>
		Carbon Monoxide	<50	mg/m <sup>3</sup>
		Total VOC's	<10	mg/m <sup>3</sup>
<b>A4-</b> Emergency Flare Stack 02	Emergency Flare 2 (new)	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	<150	mg/m <sup>3</sup>
		Carbon Monoxide	<50	mg/m <sup>3</sup>
		Total VOC's	<10	mg/m <sup>3</sup>
<b>A5</b> – Engine Exhaust CHP Engine 3	CHP Engine 3 (new 2.955MWth inputs Caterpillar Engine, 1.25MW outputs).	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	<500	mg/m <sup>3</sup>
		Sulphur Dioxide	<107	mg/m <sup>3</sup>
		Carbon Monoxide	<1400	mg/m <sup>3</sup>
		Total VOC's	No limit set	
<b>A6-</b> Engine Exhaust CHP Engine 4	CHP Engine 4(new 2.955MWth inputs Caterpillar Engine, 1.25Mw outputs).	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> ) (NO	<500	mg/m <sup>3</sup>



Emission point reference and location	Source	Parameter	Quantity	Unit
		and NO <sub>2</sub> expressed as NO <sub>2</sub> )		
		Sulphur Dioxide	<107	mg/m <sup>3</sup>
		Carbon Monoxide	<1400	mg/m <sup>3</sup>
		Total VOC's	No limit set	
<b>A7</b> - Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A8</b> – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A9</b> – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A10</b> – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A11</b> – Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A12</b> - Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A13</b> - Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use

Emission point reference and location	Source	Parameter	Quantity	Unit
<b>A14</b> – Exhaust stack backup dual fuel (biogas/diesel) boiler	Backup Diesel Boiler ( 2600kW thermal outputs and 2731kW thermal inputs).	Exhaust gases	No limit set (emergency use less than 500 hours a year)	
<b>A15</b> – Odour abatement unit vent	Odour Abatement Unit	Hydrogen Sulphide	No limit set	
		Ammonia	<20	mg/m <sup>3</sup>
		Odour Concentration	No limit set	
<b>A16</b> – Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A17</b> Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
<b>A18</b> – Vent from tanker digestate offtake odour abatement unit	Digestate tanker removal point – displaced air from vacuum tankers	Hydrogen Sulphide	No limit set	mg/m <sup>3</sup>
		Ammonia	<20	
		Odour Concentration	No limit set	
<b>A19</b> – Vent from tank farm displaced air odour abatement unit (carbon filter)	Odour Abatement Unit	Hydrogen Sulphide	No limit set	
		Ammonia	<20	mg/m <sup>3</sup>
		Odour Concentration	No limit set	
<b>A20</b> – Digestate store pressure relief valve	Air in head space of digestate store	Odoriferous air	No limit set	
<b>Point source emissions to water (other than sewers)</b>				
Emission point reference and location	Source	Parameter	Quantity	Unit
None				

Emission point reference and location	Source	Parameter	Quantity	Unit
<b>Point source emissions to sewers, effluent treatment plants, or other transfers off site</b>				
Emission point reference and location	Source	Parameter	Quantity	Unit
None				





Registered office:  
Staffordshire House  
Beechdale Road  
Nottingham NG8 3FH  
Company No. 7861810

☎ 0115 923 2253  
☎ 07506 658098 / 07525 211381  
🌐 [www.hc-consultancy.co.uk](http://www.hc-consultancy.co.uk)