Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management ?**
1.1 Local human population.	Releases of NOx, SOx, NH_3, H_2S, CO and TVOCs, PM10 and PM2.5	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	**Medium**	There is potential for exposure to local human population close to the site and to members of the public at locations where they could be regularly exposed. There is a permitted poultry Installation located 10 m to the north east which provides chicken manure for treatment to the AD Plant. Typically the poultry Installation staff are only present for short periods of time (<6 hrs at a time) except during the 7 week cleanout cycle, when equipment is operated over a period of approximately 2 days to remove manure and sanitise the sheds. The closest receptor is Courteenhall East Lodge, which comprises a collection of residential and commercial buildings. Courteenhall East Lodge is located approximately 211m north of the proposed Site boundary and 272 m from the CHP stacks. The CHP stack heights are 8.7m. The proposed site is not within an Air Quality Management Area for NOx. Air quality impacts from the operation on human receptors have been predicted through an AQIA which concluded the long-term and short-	Activities will be managed and operated in accordance with a written management system which will include the following measures: • Planned preventative inspection and maintenance programme including engine management systems by third party contractor. • The emissions abatement plant for the Manure reception building will be inspected and maintained in line with manufacturers recommendations and emissions monitoring will be carried out as per permit requirements. • Emissions to air from the CHPs and emergency boiler stacks are monitored annually by a MCERTS contractor in accordance with the permit. All monitoring required by the permit will be reported as per the permit requirements. • Leak detection and repair (LDAR) programme will be in place to mitigate and prevent fugitive emissions of biogas. • Gas pressure is continuously monitored by SCADA system and process controlled to minimise emissions from pressure relief systems and use of the emergency flare.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							term impacts at all receptors can be screened out as not significant.[1] Straw is treated within a dedicated Straw treatment building. The prepared extruded straw is moist and lands in an external bunker and is the fed into the external feed hopper throughout the day as its produced. Solid manures are stored within a dedicated Manure reception building fitted with air handling and emissions abatement. There is a covered bunker to contain the digestate separators and the fibre digestate storage. Digestate liquor is stored within a covered storage lagoon with captured gaseous emissions being passed through a bespoke impregnated carbon filter. These techniques together will significantly abate emissions to air. The tanker off-take points for digestate are each fitted with a carbon filter.	• All pressure relief systems will be inspected and calibrated as per manufacturers recommendations. This will be included within the Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1)** and Maintenance Planner **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1**).	

[1] Earthcare Technical Ltd (June 2025) Horse Close AD Plant Air Quality Impact Assessment (Doc ref: ETL747_HRCL_AQIA_V1.1)

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
1.2 Local human population.	Release of microorganisms (bio-aerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Low	**Low**	There is a permitted poultry Installation located 10 m to the north east of the AD Plant. Typically the poultry Installation staff are only present on Site for short periods of time (<6 hrs at a time) and are likely to be within the poultry unit itself and as such unlikely to be exposed to bioaerosols from the AD Plant. The closest receptor is Courteenhall East Lodge, which comprises a collection of residential and commercial buildings. Courteenhall East Lodge is located approximately 211m north of the proposed Site boundary. There is the potential for bioaerosol release when waste is received, from straw / silage and during storage of digestate. Straw is stored and treated within a dedicated Straw treatment building. The prepared extruded straw lands in an external bunker and is the fed into the external feed hopper throughout the day as its produced. Silage is stored covered and within the silage clamps.	Activities will be managed and operated in accordance with a written management system which will include the following measures: • The emissions abatement plant for the Manure reception building is inspected and maintained in accordance with manufacturers recommendations and emissions monitoring is carried out as per permit requirements. • Silage is managed in accordance with the Feedstock Management & Loading Procedure **(**HRCL**-QUAL-FEEDSTOCK MANAGEMENT-WI13-P1)**. • Process monitoring to ensure the production of a stable digestate with low residual biogas in accordance with the Process Monitoring Procedure **(HRCL-QUAL-PROCESS MONITORING-WI16-P1)** • Management systems to ensure that digestate fibre doesn't accumulate on site; Digestate Handling Procedure **(HRCL-QUAL-DIGESTATE HANDLING (SOLID AND LIQUID)-WI25-P1)**.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							Liquid feedstocks are stored within a covered tank and displaced air will be discharged through a carbon filter. Manures are stored and treated within an enclosed dedicated Manure reception building with air handling and emissions abatement. Digestate liquor is stored within a covered Digestate storage lagoon with emission abatement. Digestate fibre is stored within a covered bunker and is removed continuously from site to destination field heaps. The tanker off-take points for digestate are each fitted with a carbon filter. A Site Specific Bioaerosol Risk Assessment[2] (SSBRA) has been carried out and indicates that the residual risk from all sources associated with the AD Plant was determined as low or very low. As such, it is concluded that no further control measures, other than those detailed in the assessment, are required in order to reduce the potential for impacts at sensitive locations in the vicinity of the site.		

[2] Bioaerosol Risk Assessment, Horse Close Anaerobic Digestion Plant, Reference: 8876, February 2025

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
1.3 Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Medium	Medium	**Medium**	There is a permitted poultry Installation located 10 m to the north east which provides chicken manure for the AD Plant. Typically the poultry Installation staff are only present on Site for short periods of time (<6 hrs at a time) and are likely to be within the poultry unit itself. The closest receptor is Courteenhall East Lodge, which comprises a collection of residential and commercial buildings. Courteenhall East Lodge is located approximately 211m north of the proposed Site boundary. Local residents are often sensitive to odour. Odour can result from: • a wide range of waste, particularly when the site receives it. • the release of biogas • digestate Liquid feedstocks are stored within a covered tank and displaced air will be discharged through a carbon filter. Manures are stored and treated within an enclosed dedicated Manure reception building with air handling and emissions abatement. Digestate liquor is stored within a covered digestate storage lagoon	An Odour Management Plan **(HRCL-ETL-OMP-RPT-P1**) is in place. Crops are ensiled on site and remain covered with the open face of the clamp minimised in accordance with the Feedstock Management & Loading Procedure **(HRCL-QUAL-FEEDSTOCK MANAGEMENT-WI13-P1)**. The residence time of waste feedstocks will be minimised as far is possible, with older waste being fed prior to newer. Feedstock acceptance and loading is undertaken in accordance with the Feedstock Acceptance and Rejection Procedure **(ABL-ENV-FEEDSTOCK ACCEPTANCE & REJECTION-PRO-P1)** and Feedstock Management & Loading Procedure **(HRCL-QUAL-FEEDSTOCK MANAGEMENT-WI13-P1)**. The Manure reception building emissions abatement plant is inspected and maintained in accordance with manufacturers recommendations. Minimisation of biogas loss as per 1.1 above. Control of emissions from digestate storage as per 1.2 above.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							with emission abatement. Digestate fibre is stored within an enclosed bunker and is removed continuously from site to destination field heaps. The tanker off-take points for digestate are each fitted with a carbon filter. The digesters and ancillary tanks are all covered and gas tight. The AQIA has shown that the maximum odour impact at a receptor location is below the relevant benchmark of 3.0ouE/m^3 for "moderately offensive" odours. Therefore, the site operation is unlikely to cause an odour impact at human receptors. **Error! Bookmark not defined.**	To reduce emissions to air and to improve the overall environmental performance (BAT 38), process monitoring will be undertaken and digestate samples will be analysed periodically to verify that process controls have been effective in producing stable digestates; Process Monitoring Procedure **(HRCL-QUAL-PROCESS MONITORING-WI16-P1).**	
1.4 Local human population.	Noise and vibration.	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Medium	Medium	**Medium**	Local residents can be sensitive to noise and vibration. There is medium potential for exposure. There is a permitted poultry Installation located 10 m to the north east of the proposed AD Plant. Typically the Poultry Installation staff are only present on Site for short periods of time (<6 hrs at a time) and are likely to be within the poultry unit itself. The closest receptor is Courteenhall East Lodge, which comprises a	Noise and vibration are minimised so as not cause nuisance. The maintenance of all critical plant and equipment (including fans, extraction equipment and condensate sumps) will be captured on the Maintenance Planner **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1)** and / or Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1)**, to ensure it is suitably maintained and reduce the likelihood of noise from improper upkeep.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							collection of residential and commercial buildings, including agricultural premises and an aggregate supplier. Courteenhall East Lodge is located approximately 211m north of the proposed Site boundary. Although the AD system will operate continuously, the normal operational hours for vehicle movements are 0700 to 1900, Monday to Sunday inclusive, thus avoiding night-time operations. The Planning Permission restricts deliveries of agricultural by-products and the export of digestate to/from the site to between 0800- and 1800-hours Monday – Friday and 0800 to 1300 Saturday. Except during periods of specific agronomic crop benefit in March, May and July the export of digestate can take place between 0800- and 1800-hours Monday – Sunday.	Emergency flare use will be minimised with operating hours recorded on SCADA. A copy of the Environment Agency's Qualitative Noise Screening Assessment Tool (QNST) has been completed for the Site which concludes that neither a Noise Impact Assessment nor a Noise Management Plan are required at this time. If noise emissions are detected off-site then corrective actions will be taken as soon as possible and a Noise Management Plan (NMP) will be developed, submitted to the EA and implemented.	
2.1 Local human population, livestock and wildlife after gaining unauthorised	Gaining unauthorised access to the installation.	There is a risk of direct physical contact with all on-site hazards such as wastes,	Direct physical contact.	Low	Low	**Low**	Direct physical contact is minimised by the activity being carried out within enclosed tanks, pipework, and digesters, so a low magnitude risk is estimated.	Activities are managed and operated in accordance with a management system which includes site security measures (Section 3.7, EMS Manual **(HRCL-ETL-EMS-MAN-P1)** to prevent unauthorised access. The site will benefit from:	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
access to the installation.		machinery and vehicles. There is a risk of causing injury to humans or livestock.						• 2.4m high anti-climb mesh fencing is installed around the site, with additional safety fencing around the Digestate storage lagoon, Clean water lagoon and Dirty water lagoon. • Double leaf vehicle access gates and a pedestrian access gate. • CCTV installed and operational remote cameras. The site will be manned from 0700 to 1900 and the CCTV will be remotely monitored out of hours. • The main gate will be locked when the site is not manned. • Any security breaches will be reported to Management. The site specific DSEAR risk assessment **(HRCL-ABL-DSEAR RISK ASSESSMENT-H&S-P1)** will cover unauthorised access to site. Maintenance workers and contractors will only be permitted on site if suitably qualified for planned tasks and in accordance with Permit to Work requirements if applicable.	
3.1 Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to	Respiratory irritation, illness and nuisance to local population.	Air transport of smoke. Spillages and contaminated firewater by direct run-off	Low	Medium	**Medium**	The consequences of an incident whereby substances are released to air, water or land may be serious, affecting both human health and the	As above. An Accident Management Plan Manual **(HRCL-ETL-AMP-RPT-P1**) forms part	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
	air (smoke or fumes), water or land.	Injury to staff, fire fighters or arsonists/ vandals. Pollution of water or land.	from site and via surface water drains and ditches.				environment, through loss of containment. The tanks containing polluting substances either sit within the secondary containment system for the site or benefit from separate bunding and control. Biogas is flammable, risk of direct physical contact is reduced by activities being carried out within enclosed systems.	of management system (includes fire, biogas release and spillages). The site specific DSEAR risk assessment **(HRCL-ABL-DSEAR RISK ASSESSMENT-H&S-P1)** will identify all areas of risk. Fire control measures and procedures will be set out in the DSEAR plan and will be communicated to the local fire service. A HAZOP **(THR-OD-17)** will be produced, which will in part inform the schedule of planned maintenance which will be in place **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1)** Warning signs including ATEX zone signage will be clearly displayed, and operatives will be fully trained in gas alarm procedures. All visitors will be accompanied by trained staff. LDAR programme will be in place to mitigate and to prevent fugitive emissions of biogas. Contingency measures will be considered in the event of loss of plant and are detailed in the Accident Management Plan Manual **(HRCL-ETL-AMP-RPT-P1).** This will include contingencies for waste diversion and	

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
								digestate storage in the absence of critical plant.	
3.2 Local human population and local environment.	Accidental explosion of biogas risks causing fire and smoke to travel through the air.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/ vandals. Pollution of water or land.	Air transport. Spillages and digestate direct run-off from site and via surface water drains and ditches.	Low	Medium	**Medium**	The risk of occurrence is reduced by effective management systems. Biogas is flammable, and the consequences are likely to be serious, including risk to the safety and wellbeing of those working or in close proximity to the site and loss of containment may be detrimental to the environment.	Risks will be managed as per 2.1 and 3.1. The management system will include the risk management measures specified in the HAZOP **(THR-OD-17**) and DSEAR risk assessment **(HRCL-ABL-DSEAR RISK ASSESSMENT-H&S-P1)** including planned maintenance schedules **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1)**. An Accident Management Plan Manual **(HRCL-ETL-AMP-RPT-P1**) forms part of management system (includes fire, biogas release and spillages). A Training procedure **(ABL-QUAL-TRAINING-PRO-P1)** and Overarching Skills and Competency Matrix (**ABL-QUAL-SKILLS & COMPETENCY MATRIX-MAT-P1**) form part of the EMS and include training for emergency situations and incident preparedness, at prescribed training intervals. Details of the site's secondary containment, including tank bunding design is included within Section 6.2 of	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
								the EMS Manual **(HRCL-ETL-EMS-MAN-P1).**	
3.3 Local human population and local environment.	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land.	As above.	Low	Medium	**Medium**	The risk is reduced by control measures in place and an effective management system.	This risk is managed in the same way as risks 2.1, 3.1 and 3.2. A Lightning Risk Assessment **(HRCL-ABL-LIGHTNING RISK ASSESSMENT-H&S-P1)** will be undertaken to determine the requirement of any lightning conduction equipment. Equipment identified as necessary by the risk assessment will be installed. Activated carbon and other combustible materials will be stored safely and in accordance with any manufacturers' recommendations. A Fire Risk Assessment will be undertaken for the Site and the required control measures will be implemented.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
4. Risk of land bank contamination	Plastic in digestate and chemicals of concern contaminating the land bank Operators land spreading contaminated digestate.	Risk of long term impact on soil and crop quality.	Direct application to soils through land spreading, uptake of contaminants from crops.	Low	Low	**Low**	There is a risk of impact on soil and crop quality. However, slurry, non-hazardous liquid waste and manures should not contain plastic.	Feedstock materials are unlikely to contain plastics due to nature and origin. Feedstocks are to be visually inspected prior to use in accordance with the Feedstock Acceptance **(ABL-ENV-FEEDSTOCK ACCEPTANCE & REJECTION-PRO-P1)**. Visible plastics will be removed prior to processing and where not possible, the feedstock will be rejected. Digestate liquor and fibre will be routinely tested (Sampling & Analysis Procedure **(ABL-ENV-SAMPLING & ANALYSIS-PRO-P1**)) to ensure it is suitable for application to land and it is applied at an appropriate rate (Digestate Management Plan **(HRCL-ETL-DMP-RPT-P1)**). Quarterly waste returns will include the details of any recovered outputs.	
5.1 All surface waters close to and downstream of site.	Spillage of liquids, including oil and digestate.	Acute effects: fish kill. Water supply pollution	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Medium	Medium	**Medium**	There is the potential for spillage from digestion tanks and digestate and other polluting substances such as oil from storage vessels on site.	Construction Quality Assurance validation will be undertaken on all anaerobic digestion tanks and ancillary tanks where appropriate and reports will be retained. All storage areas and containment are designed and constructed to the relevant industry standard (SSAFO for	**Low**

							The site is within the Nene Catchment and there is a watercourse 28m northwest of the site boundary which feeds into a small inline pond (approximately 50m^2 in area) and then into a tributary of the Wootton Brook (2.9km north of the site). There is a new pond, a biodiversity enhancement feature, to be built and landscaped to the northeastern corner of the site. The site is also within a Drinking Water Safeguard Zone for Surface Water (Anglian_SWSGZ1006,1007,1008,1009,1010_River Nene) There is a sealed drainage system in place with clearly designated clean and 'dirty areas'. Run-off from areas designated as 'dirty' as well as condensate will be recirculated back through the AD process. Condensate sumps will be checked daily **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1)**. There will be a documented drainage plan for the site. All storage areas and containment are designed and constructed to the relevant industry standard (SSAFO for silage clamps & CIRIA 736 for primary and secondary containment).Manure is stored on concrete surfacing within the Manure reception building with sealed drainage back to the process. Run-off is restricted to clean surface water and under normal operating conditions, there will be no point source emissions. Digestate liquor is stored within a covered storage lagoon with leak detection.	silage clamps & CIRIA 736 for primary and secondary containment). During abnormal rainfall events, clean water from the containment bunds may need to be discharged to maintain capacity within the bund for a catastrophic tank failure. Any water would be subject to analysis prior to discharge and would need to meet BAT-associated emission levels (BAT-AELs) for direct discharges to a receiving water body. Procedures for discharging flood water are detailed in Discharge of Flood Water Procedure **(HRCL-QUAL-DRAINING MANAGEMENT AND CONTROL-WI23-P1)**. All staff will be trained and conversant with the site's Accident Management Plan Manual **(HRCL-ETL-AMP-RPT-P1)** and associated procedures.	

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management ?**
							Oil storage tanks are to be provided with the CHP Engines and are bunded within the container.		
5.2 All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality.	As above. Indirect run-off via the soil layer.	Medium	Medium	**Medium**	As above	As above. All storage areas and containment are designed and constructed to the relevant industry standard (SSAFO for silage clamps & CIRIA 736 for primary and secondary containment). A validation report for all critical infrastructure (primary and secondary containment) will be provided prior to commencing operation to ensure all elements have been designed and built to the relevant standard. An inspection, maintenance and repair schedule of the facility's critical infrastructure, including the impermeable surfacing and drainage system will be implemented; Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1)** & Maintenance Planner **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1)**. The Digestate storage lagoon and Dirty water lagoon will be inspected daily and a freeboard of 750mm maintained	**Medium**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management?**
								within each at all times **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1)**. The transfer of digestate will be supervised and undertaken in accordance with the Digestate Handling Procedure **(HRCL-QUAL-DIGESTATE HANDLING (SOLID AND LIQUID)-WI25-P1)**.	
6. Abstraction from watercourse downstream of facility (for agricultural or potable use).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Medium	Medium	**Medium**	As above	This risk is managed in the same way as risks 5.1 and 5.2 above. Impermeable surfacing is in place to prevent potential pathways for any pollution, spills for example, to groundwater. Visual integrity checks of all primary containment will be undertaken daily in line with the site Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1**) and the digesters are subject to integrity testing every 5 years, which is captured on the Maintenance Planner **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1**). The 1 No. leak detection pot to HDPE layer (under concrete slab) to be inspected every day in accordance with Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1).** The 3No. leak detection pots for the digesters will be checked daily in	**Medium**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
								accordance with Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1).**	
7. Groundwater	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Medium	Medium	**Medium**	As above The site is not located within a Groundwater Source Protection Zone, or within 50 metres of any well, spring or borehole used for the supply of water for human consumption. The inlet to the surface water storage system can be isolated with the use of a penstock stopping any further releases to Clean water lagoon.	Risk management is as set out in 5.1, 5.2 and 6.1. The leak detection chamber serving the concrete slab will be checked daily. This is to assess if there are any spillages arising from the concrete slab and concrete tank bases onto the HDPE liner below. Process parameters, such as volumes within tanks and digestate stores will be monitored daily by site operatives and recorded on the site's Daily Check list **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1**). Underground pipework has been avoided where possible and with the exception of drainage pipework is limited to a small stretch of HDPE pipework beneath the farm track, transferring separated liquor digestate to the Digestate Lagoon. The lagoon pipework benefits from secondary containment and leak detection. All drainage within the containment system will be located above the 1.0mm HDPE membrane, with pipes, channels &	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
								chambers to have minimum 175mm concrete surround. There is an HDPE layer under the concrete slab with leak detection to provide further reassurance as to containment integrity. The inspection of this leak detection system via 1 No. leak detection pot on a daily basis will identify any leaks arising from the concrete slab. The sub-surface tanks, namely the Silage Effluent Tank and the Digesters (slightly submerged) benefit from leak detection. Leak detection pots will be inspected daily in accordance with Daily Checks **(HRCL-QUAL-DAILY CHECKS-AQD 24-P1).**	
8. Risk of diffuse emissions from polluting and greenhouse gases such as methane and ammonia	Fugitive releases of volatile organic compounds such as methane from storage of gas bags, lagoons, tanks, vents and pipe work.	Acute effects and long-term effects on air quality, longer term effects of volatile organic compound releases and adding to global climate change	Airborne fugitive emissions from site	Medium	Medium	**Medium**	Biogas contains high levels of methane and carbon dioxide. The digesters and ancillary tanks are all covered and gas tight. Digestate and digestate storage may release ammonia which can impact air quality. Burning biogas and biomethane can produce harmful pollutants. Manures are stored and treated within an enclosed dedicated Manure	There will be controls in place to mitigate the risk of diffuse emissions from the site which include: • The Manure reception building emissions abatement plant is inspected and maintained in accordance with manufacturers' recommendations. • Venting to air from digester tanks will be minimised by the correct fitting and configuration of PVRVs including Daily Checks **(HRCL-**	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							reception building with air handling and emissions abatement. Digestate liquor is stored within a covered Digestate storage lagoon with emissions abatement. Digestate fibre is stored within a covered bunker and is removed continuously from site to destination field heaps. The tanker off-take points for digestate are each fitted with a carbon filter.	**QUAL-DAILY CHECKS-AQD 24-P1)**. • Process monitoring of the AD plant will minimise excess biogas production and the likelihood of an overpressure event – Process Monitoring Procedure **(HRCL-QUAL-PROCESS MONITORING-WI16-P1)**. • The emergency flare has a set point lower than that of the PVRVs minimising emissions of unburnt biogas. The operation of the PVRVs will be recorded as an abnormal event. • Gas pressures will be continually measured and monitored within SCADA. • LDAR programme will be actioned to mitigate and prevent fugitive emissions. • The Gas holder will be maintained as per manufacturer's recommendations and will be included on the Maintenance Planner **(HRCL-QUAL-MAINTENANCE PLANNER-AQD 27-P1**).	
9. Protected Sites, including National Parks and Areas of Outstanding	Any, but principally NOx and NH_3.	Harm to protected sites:	Any	Low	Low	**Low**	Anaerobic digestion operations may cause harm to and deterioration of nature conservation sites. The site is located:	Control measures as detailed under 1.1, 3.1, 3.2, 3.3, 5.1, 5.2, 6 and 8 above.	**Low**

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management ?**
Natural Beauty, Marine Conservation Zones, Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas & Ramsar wetland sites		-contamination -nutrient enrichment -leachate - surface water run-off -smothering -disturbance -predation from pests and vermin					>500m from any European site (defined within Regulation 8 of the Conservation of Habitats and Species Regulations 2017) or a Site of Special Scientific Interest. > 250 metres of the presence of great crested newts, and >50 metres of a Local Nature Reserve, Local Wildlife Site, Ancient Woodland, Scheduled Monument. There are several areas of Priority Habitat Inventory Deciduous Woodland within close proximity (<50m) to the site, specifically an area designated as Priority Habitat (PHI) deciduous woodland adjacent to the southwest corner of the AD site area and west of the lagoon and a further PHI woodland area around 34m to the northwest of the site boundary. There will be no composting of digestate fibre on site. Emission limits for stack gases are specified within the permit. Manure is handled in a dedicated building with air handling and emissions abatement including ammonia abatement.	The Manure reception building emissions abatement plant is inspected and maintained in accordance with manufacturers recommendations. An ammonia reduction plan will be implemented where necessary. A fugitive emission plan will be implemented where necessary.	

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
What is at risk? What do I wish to protect?	What is the agent or process with potential to cause harm?	What are the harmful consequences if things go wrong?	How might the receptor come into contact with the source?	How likely is this contact?	How severe will the consequences be if this occurs?	What is the overall magnitude of the risk?	On what did I base my judgement?	How can I best manage the risk to reduce the magnitude?	What is the magnitude of the risk after management?
							All tanks are covered and the digestate liquor is stored in a covered lagoon with emissions abatement. There is a carbon filter on both vents for displaced air during off-take of digestate liquor. Digestate fibre is stored in a covered bunker and moved off -site to destination field heaps continuously. Air quality impacts from the operation on ecological receptors have been predicted through an AQIA which concluded that he long-term and short-term impacts at all receptors can be screened out as not significant.		

Magnitude of Risk	Consequence		
Probability of Exposure	**Low**	**Medium**	**High**
Low	**Very Low**	**Low**	**Medium**
Medium	**Low**	**Medium**	**Medium**
High	**Medium**	**Medium**	**High**