ERA8 Fugitive Emissions – to Air – Odour

Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	*What is the risk? What do I wish to protect?*	*How can the hazard get to the receptor?*	*How likely is this contact?*	*What is the harm that can be caused?*	*What is the risk that still remains*	*What measures will we take to reduce the risk?*	*What risk remains following the application of management measures?*
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** *Odour annoyance*	**Air**	**MEDIUM**	**MEDIUM**	**MEDIUM**	• Implementation of Odour Management Plan (K163.1~09~008). • All vehicles delivering and collecting material to / from the site are sheeted or are sealed tankers. • All waste is assessed prior to initial acceptance for suitability in terms of permit compliance. • Efficient and prompt unloading of delivery vehicles directly into allocated area. • All areas are subject to regular housekeeping • Waste is transferred through the hopper and macerator to one of 6 sealed holding tanks awaiting digestion. • Daily monitoring of odour generation, this is undertaken by the site operator during daily operation and inspection at the site. All areas where possible odour could arise (EPR1 & EPR4) are inspected and 'sniff tested' for odour generation.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	*What is the risk? What do I wish to protect?*	*How can the hazard get to the receptor?*	*How likely is this contact?*	*What is the harm that can be caused?*	*What is the risk that still remains*	*What measures will we take to reduce the risk?*	*What risk remains following the application of management measures?*
						Where odour is detected mitigation measures will be employed. • Fully enclosed anaerobic digestion vessels and secondary digester. • Biogas combustion exhaust emissions used to improve greenhouse atmosphere for optimum tomato growth. • Natural crust cover develops on lagoon which inhibits odour release, due to the installation of the secondary digester lagoon storage volume has decreased. • Digestate removed from the site in sealed tankers.	

ERA9 Fugitive Emissions – to Air – Dust & Particulate Matter

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	*What is the risk? What do I wish to protect?*	*How can the hazard get to the receptor?*	*How likely is this contact?*	*What is the harm that can be caused?*	*What is the risk that still remains*	*What measures will we take to reduce the risk?*	*What risk remains following the application of management measures?*
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** **Atmosphere** **Inhalation of particles. Deposition of dust/particles on property and land.**	**Air**	**LOW**	**MEDIUM**	**MEDIUM**	• Implementation of Emissions Management Plan (K163.1~09~012). • All solid waste delivered to site will be covered. • Internal routes are constructed and maintained to minimise dust. • All areas are subject to regular housekeeping. • Vehicle speeds would be restricted to a maximum of 10 mph. • All vehicles, plant and machinery would be inspected and maintained regularly in line with maintenance schedule set out by the manufacturer's specifications. • Biogas combustion exhaust gases are filtered and used within the onsite greenhouses to aid tomato production; exhaust gases are only emitted periodically, and their emission is regulated by the Site's Environmental Permit. • The site is equipped with a Selective Catalyst Reduction scrubber. This reduces the exhaust gas	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	*What is the risk? What do I wish to protect?*	*How can the hazard get to the receptor?*	*How likely is this contact?*	*What is the harm that can be caused?*	*What is the risk that still remains*	*What measures will we take to reduce the risk?*	*What risk remains following the application of management measures?*
						emissions by approximately 95% to levels beneficial for inclusion within the onsite greenhouses, once the beneficial gases have been utilised by the tomato plants the residual emissions are released to atmosphere through the greenhouse venting system. This process has been operating at the site for a number of years without detrimental impact to the environment. • Nature of the digestate stored in the lagoon does not create dust or particulate matter. • Combustion exhaust emissions are monitored and maintained in compliance with the site's Environmental Permit. • Combustion exhaust emissions have been subject to an air dispersion assessment; the results are presented in Appendix C.	

ERA10 Fugitive Emissions – to Air – Litter & Debris

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** *Litter Nuisance*	**Air; windblown, physical transport and deposition**	**LOW**	**MEDIUM**	**LOW**	• Implementation of Emissions Management Plan (K163.1~09~012). • All vehicles delivering materials to the site are sheeted. • Fully enclosed holding tanks and digestion vessels. • Regular housekeeping of site surfaces to remove litter and debris and prevent spread. • Vehicle cleaning facilities available. • Nature of the digestate stored in the lagoon does not create litter or debris. • All vehicles are visually inspected prior to leaving the site. • Extended concrete haul road before the public highway. • Waste received within designated area. • Waste types received at site do not contain significant amounts of light or loose material. • Daily inspections by site staff and records kept.	**LOW**

ERA11 Fugitive Emissions – Pests, Vermin & Scavengers

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** *Amenity impact and impact on human health*	**Land, air, water**	**LOW**	**MEDIUM**	**MEDIUM**	• Implementation of Emissions Management Plan (K163.1~09~012). • All waste is assessed prior to initial acceptance for suitability both in terms of permit compliance and risk of attraction to pests. • All vehicles delivering and collecting materials are covered. • Wastes are transferred from the reception area, through the hopper and macerator to sealed holding tanks awaiting digestion. • Fully enclosed process vessels. • All areas are subject to regular housekeeping. • Contract with pest controller/contractor as necessary. • Pest control contractor would be employed where required.	**MEDIUM**

ERA12 Fugitive Emissions – Mud & Debris

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery and storage of green waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	***Humans & Property*** *Amenity impact*	**Direct deposition**	**MEDIUM**	**MEDIUM**	**MEDIUM**	• Implementation of Emissions Management Plan (K163.1~09~012). • All vehicles delivering and collecting materials to/from the site are covered. • Site access and vehicle movement areas are hard surfaced. • Portable vehicle cleaning equipment will be available. • Extended concrete haul road before the Public Highway. • All vehicles leaving the site are visually inspected prior to departure. • Internal haul routes would be maintained to minimise mud/debris. • Daily inspections by site staff and records kept.	**LOW**

ERA13 Fugitive Emission – to Water

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery of material to the site) **ERP2 Storage** **ERP3 Treatment processes** **ERP4 Material Dispatch**	**Surface Water** **Groundwater** *Contamination*	**Land, water, runoff**	**LOW**	**MEDIUM**	**MEDIUM**	• Implementation of Emissions Management Plan (K163.1~09~012). • Site reception and storage areas are constructed of an impermeable surface. • Site is underlain by a sealed drainage system. • Intrusive site investigations have not identified any superficial deposits (Lowestoft Formation) onsite. • The bedrock beneath the site is a Secondary Aquifer (Undifferentiated) or unproductive strata so there is a low risk to underlying groundwater. • Anaerobic digestion tanks are sealed with leak detection systems in place. • Digestion bag is located within a clay lined lagoon providing secondary containment with leak detection systems available in underlying drainage system. • Lagoon is constructed of clay and HDPE liner with leak detection systems available in basal drainage system.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
						• Lagoon has a 1m freeboard. • Spill kits on-site and employees are trained in their use.	

ERA14 Point Source Emissions – to Air

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP3 Biogas combustion	**Humans & Property** **Sensitive Environmental Sites** **Atmosphere** **Adverse impact**	**Air**	**HIGH**	**HIGH**	**HIGH**	• Air quality assessment for three CHP engines at Green Tye Farm, Much Hadham, prepared by Cambridge Environmental Research Consultants (Ref: Air quality assessment for four CHP engines at Green Tye Farm, Much Hadham Appendix C). • Exhaust gases are emitted to air when not being utilised within the onsite greenhouses. The limits for emissions are governed by the environmental permit and annual monitoring of these emissions is undertaken in accordance with the permit requirements.	**LOW**

ERA15 Accidents

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
Transferring substances							
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoon) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient soil improver)	***Humans & Property*** ***Surface water*** ***Atmosphere*** ***Adverse impact***	**Land, air, water**	**LOW**	**MEDIUM**	**MEDIUM**	• All vehicles delivering and collecting materials to/from the site are covered. • All onsite transfers are overseen by a competent person, within designated transfer areas underlain by an impermeable surface. • Spill kits available. • Storage tanks are away from the vehicle movement areas. • Design of digesters means impact by vehicles is not possible.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
Equipment Failure							
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** **Surface water** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**HIGH**	**MEDIUM**	• Limited vehicle movements into site reduces risk of accident. • All vehicle movement areas are hard surfaced. • Computer controlled digestion system with incorporated alarms. • Critical spares held on site. • Planned maintenance programme reduces the likelihood of failure of key process components. • Continuous monitoring of combustion gases for use in the greenhouses. • A herringbone drainage system is installed beneath the digestate storage lagoon. This drains, via an inspection chamber, to a field ditch to the north. If digestate is found in the inspection chamber the drain will be blocked and mitigation measures employed to remove digestate, investigate the leak and make repairs where necessary.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
						• The inspection chamber is inspected daily during routine site inspection undertaken by the operator.	
Flooding							
N/A: The site does not lie within an area susceptible to flooding							
Vandalism							
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in open lagoon)	**Humans & Property** **Surface water** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**HIGH**	**MEDIUM**	• Site is secured by fencing. • Site is located within a rural setting. • Critical elements of process will be additionally secured with specifically designed housing/cabinets. • Members of staff live at the site so there is presence onsite during non-operational hours. • There is an “on call” procedure shared between 3-4 members of staff whereby members of staff will respond to any text/alarm call associated with the SCADA software outside of operational hours.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP5 Dispatch (dispatch of final digestate for use as a nutrient/soil improver)							
Fire							
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoon) **ERP5 Dispatch** (dispatch of final digestate for use	**Humans & Property** **Atmosphere** *Loss of life and property, loss of habitat, destruction and loss of amenity*	**Spread through physical contact; fanned by winds**	**LOW**	**HIGH**	**MEDIUM**	• Implementation of Fire Prevention Plan (K163.1~09~005). • Waste storage areas are organised with appropriate breaks/bays between materials. • Potential ignition sources are removed from waste storage area. • The site is a designated no smoking area. • All areas are subject to regular housekeeping. • Process equipment is constantly monitored by SCADA system. There is an “on call” procedure shared between 3-4 members of staff whereby that member of staff will respond to any text/alarm call outside operational hours.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
as a nutrient/soil improver)							
Explosion							
Production, storage and combustion of biogas	**Humans, property and environment**	**Direct**	**LOW**	**HIGH**	**MEDIUM**	• DSEAR Assessment of Guy & Wright Ltd AD Plant, prepared by BRE Global Ltd dated 13th June 2016 (Ref: P103790-1000 Issue:1 provided in Appendix D).	**LOW**

ERA16 Noise & Vibration

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	**Humans & Property** **Amenity impact**	**Air, land**	**LOW**	**MEDIUM**	**MEDIUM**	• Operations are undertaken within enclosed vessels. • Vehicles are only allowed access to the site within defined operating hours. • Process equipment is inspected and maintained regularly. • Away from sensitive receptors.	**LOW**

ERA17 Climate Change

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
ERP1 Reception (delivery and storage of waste in the reception area) **ERP2 Anaerobic Digestion** **ERP3 Biogas combustion** **ERP4 Lagoon storage** (storage of digestate in lagoons) **ERP5 Dispatch** (dispatch of final digestate for use as a nutrient/soil improver)	***Humans & Property*** ***Environmentally Sensitive Sites*** ***Surface Water*** ***Groundwater*** ***Atmosphere*** *Adverse impact*	**Land, air, water**	**MEDIUM**	**MEDIUM**	**MEDIUM**	• Refer to Climate Change Risk Assessment (K163.1~09~011). • Site is secured by fencing and gated, and CCTV is monitored externally 24/7. • Regular monitoring of weather warnings/EA warnings. • All vehicles delivering waste will abide by on-site speed limits and road markings. • Waste deliveries and site operations shall be overseen by the Technically Competent Manager or nominated competent person. • Unloading of waste will only be undertaken in designated areas. • Appropriate training regarding process/plant operation and emergency procedures is provided to all relevant staff. • Plant and equipment will be maintained in accordance with their maintenance schedules or when applicable.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
What has the potential to cause harm?	What is the risk? What do I wish to protect?	How can the hazard get to the receptor?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains	What measures will we take to reduce the risk?	What risk remains following the application of management measures?
						• The site will be managed in accordance with the minimum operating standards detailed in the Fire Prevention Plan (K163.1~09~005)	