

ACCIDENT PREVENTION AND MANAGEMENT PLAN

Crompton Road, Ilkeston, Derbyshire

Stanton Energy Ltd

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1 Introduction

- 1.1 This Accident Prevention and Management Plan (APMP) has been prepared as part of an Environmental Permit Application for the operation of a facility for the recovery of non-hazardous and hazardous wastes within an Anaerobic Digestion Facility at Crompton Road, Ilkeston, Derbyshire.
- 1.2 The site will be operated by Stanton Energy Ltd in accordance with a fully comprehensive Environmental Management System (EMS) and Environmental Permit (EP). The wastes to be handled and treated on site may include the following:
- Manure;
 - Grass and Maize Silage;
 - Green waste;
 - Food waste;
 - Grease;
 - Brewery Waste;
 - Filtrate from press process;
 - Contraband Material (Tobacco Material);
 - Vegetables;
 - Dairy;
 - Bakery; and,
 - Kerbside food waste
- 1.3 An operational layout of the facility is shown on Drawing No. 058-003-03 in Appendix I of this AMP.
- 1.4 This document primarily considers environmental risks associated with accidents and outlines appropriate mitigation. This has been prepared to meet permitting requirements

and does not aim to provide detailed Health and Safety risk assessments as required separately through the necessary legislation.

2 Emergency and Key Contacts

2.1 Emergency and key contact are outlined within the table below

Table 2.1 – Key Contacts

Site Address:	Crompton Road, Ilkeston, Derbyshire		
Site Operator:	Stanton Energy Ltd	National Grid Ref:	SK 47999 39325

CONTACT	DESCRIPTION	OFFICE HOURS	OUT OF HOURS
Alan Cook	Operator	TBC	TBC
Ilkeston Hospital Heanor Road, Ilkeston, DE7 8LN	Main NHS Hospital	0115 9305522	999 or 112
Eden Surgery Cavendish Road, Ilkeston, DE7 5AN	Local Doctor Surgery (GP)	0115 9444081	111, 999 or 112
Derbyshire Police Ilkeston Police Station, Heanor Road, Ilkeston, DE7 8DY	Local Police Non- Emergency	101	999
	Police Emergency	999	999
Derbyshire Fire and Rescue Service Ilkeston Fire Station, Derby Road, Ilkeston, Derbyshire, DE7 5EZ	Fire and Rescue Service (in Emergency Dial 999)	01772 305305	999
Environment Agency	Environmental Regulator	03708 506506	0800 80 70 60
<u>Derbyshire County Council</u> County Hall, Matlock, DE4 3AG	Council Enquiries	01629 533190	999 or 112
Severn Trent Water	Local Water Supplier / Sewerage Provider	0800 783 4444	0800 783 4444
<u>Oaktree Environmental Ltd</u> Lime House, 2 Road Two, Winsford, Cheshire, CW7 3QZ	Specialist Advisor (Waste and Planning Issues)	01606 558833	999 or 112

3 Potential environmental hazards

Table 3.1 – Potential environmental hazards and mitigation

Hazard	Pathway	Receptor	Mitigation Measures
Inadequate waste acceptance procedures	Airborne, land	Site operatives, visitors and local residents.	<ul style="list-style-type: none"> - The site will only accept conforming wastes onto the site. - The site has strict waste acceptance procedures which have been detail within the site’s EMS (Ref 058-003-A)
Waste Storage	Airborne, land and water	Site operatives, visitors and local residents.	<ul style="list-style-type: none"> - Waste will be stored on the site for a maximum of <7 days.
Transfer of Substances, (liquids)	Airborne, land and water	Site operatives, visitors and local residents.	<ul style="list-style-type: none"> - The plant is situated within a bunded area (contained using bund gate) and on an impermeable concrete surface. - The transfer of liquid substances will be done so in accordance with the procedures detailed in the management plans.
Release of Biogas	Airborne	Site operatives, visitors, local residents and atmosphere.	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place. - The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document).
Uncontrolled Release of Biogas	Airborne	Site operatives, visitors and local residents.	<ul style="list-style-type: none"> - The biogas levels are continuously monitored via the Control Cabinet. The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document).
Operational failure of plant, equipment and infrastructure	Airborne, land and water	Site operatives, visitors and local residents.	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place. - Operational failure procedures are detailed in the site’s EMS Ref 058-003-A).
Emissions from Plant and equipment	Airborne, land and water	Site operatives, visitors, local residents and atmosphere.	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place to ensure that plant and equipment are maintained in accordance with manufacturers recommendations.

Breach of the plant and Storage Tank(s)	Airborne, land and water	Site operatives, visitors, local residents, surface water, groundwater, soils.	<ul style="list-style-type: none"> - The plant is situated within a bunded area (contained using bund gate) and on an impermeable concrete surface and provides the required containment for digestate.
Loss of Containment of Waste Liquors or Digestate	Airborne, land and water	Site operatives, local residents, surface waters, groundwater and soils.	<ul style="list-style-type: none"> - The plant is situated within a bunded area (contained using bund gate) and on an impermeable concrete surface and provides the required containment for digestate.
Failure of Flare	Airborne	Site operatives, visitors, Local residents and atmosphere	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place. - Operational failure procedures are detailed in the site's EMS Ref 058-003-A). - The flare is controlled by a gas buffer level to prevent over and under-pressure. - The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document).
Use of Pressure Release Valves	Airborne	Site operatives, visitors, local residents and atmosphere	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place. - Operational failure procedures are detailed in the site's EMS Ref 058-003-A). - The plant is fitted with over and under-pressure valves.
Incompatible Substances	Airborne, land and water	Site operatives, visitors, local residents, surface water, groundwater, atmosphere and soils.	<ul style="list-style-type: none"> - The site will only accept conforming wastes onto the site. - The site has strict waste acceptance procedures which have been detail within the site's EMS (Ref 058-003-A)
Failure of Main Services, i.e electricity.	Airborne	Site Operatives, visitors, local residents and atmosphere.	<ul style="list-style-type: none"> - Operational failure procedures are detailed in the site's EMS Ref 058-003-A).
Over Filling of Vessels	Airborne, land and water	Site operatives, visitors, local residents, surface water, groundwater, soils.	<ul style="list-style-type: none"> - The primary digester is completed with an over- and under pressure protection. If a too high pressure in the primary digester occurs, biogas is blown off through the protection. This way an over-

			<p>pressure can never occur in the tank.</p> <ul style="list-style-type: none"> - The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document).
Explosion Arising from the storage of Gas (biogas and propane)	Airborne	Site operatives, visitors, local residents, surface water, groundwater, soils and atmosphere.	<ul style="list-style-type: none"> - The operator undertakes daily visual monitoring and has a preventative maintenance schedule in place. - Operational failure procedures are detailed in the site's EMS Ref 058-003-A). - The plant is fitted with over and under-pressure valves ensuring that biogas is blown off through protection to prevent the tanks from becoming over-pressurised. - All equipment in areas with risk of explosion, will be installed in accordance with ATEX and DSEAR regulations
Failure to Contain Firewater	Land and water	Site operatives, visitors, local residents, surface water, groundwater, soils, on site buildings.	<ul style="list-style-type: none"> - The site operates in accordance with an FPP Ref 058-003-B which details procedures for the containment of fire water.
Site Security Failures/Vandalism	Airborne, land and water	Site operatives, visitors, local residents, surface water, groundwater, soils.	<ul style="list-style-type: none"> - Please refer to the EMS and FPP for details of the site security. - The site security will be inspected on a daily basis and any defects which impair the effectiveness of the security will be repaired to the same or better standard within a suitable timescale. All repairs will be noted on the site diary or daily inspections forms and repaired as soon as practically possible. - The security measures at the site are under constant daily review under the site's inspection regime. If unauthorised access becomes apparent as a problem at the site the security measures will be reviewed and improvements implemented.
Operator/Human Error	Airborne, land and water	Site operatives, visitors, local residents, groundwater, surface	<ul style="list-style-type: none"> - All staff are trained and undergo toolbox talks to reduce the impact of human error.

		water, soil, and atmosphere.	- In instances of a human error, the site may suspend operations until the issue has been rectified and the member of staff will be re-trained accordingly.
Dust from waste handling operations and from traffic on internal roads.	Airborne	Site operatives, visitors, local residents, and atmosphere.	- Procedures for the control of dust are detailed in section 4.0 of the EMS Ref 058-003-A.
Mud and debris on the public highway	Airborne	Local residents, road users, atmosphere.	- Procedures for the control of mud and debris are detailed in section 4.0 of the EMS Ref 058-003-A.
Vehicle Collision	Airborne, land and water	Site operatives, visitors and local residents.	- All vehicle movements will be carried out under the supervision of an on-site operative.

4 Substances stored on Site

4.1 The following table provides an outline of all substances to be stored on site, storage quantities and arrangements.

Table 4.1 – Substances stored on site

Substance	Nature of Substance and Storage Arrangements On-Site	Max Quantity Stored
Propane	Stored in tanks sealed tanks. Loaded/unloaded via an enclosed line. The plant required to comply with ATEX and DSEAR.	590,700 litres (per year)
Ferric Chloride	Integrated desulphurization unit within the digester. The plant required to comply with ATEX and DSEAR.	1000 litres (per year)

5 Accident Risk and Mitigation

5.1 The following table outlines potential accidents that could occur and an outline of appropriate mitigation to avoid the accident occurring and in the event an accident should occur, measures to minimise the impact.

5.2 In accordance with the relevant guidance, the likelihood and consequences of each accident/incident have been outlined using the definitions described within the following tables.

Table 5.1 – Likelihood of Accident/Incident

Abbreviation	Probability	Evaluation
1	Very likely	Could occur during any working day
2	Likely	Could occur regularly
3	Possible	Event possible
4	Unlikely	Event very unlikely

Table 5.2 – Consequences of Accident/Incident

Abbreviation	Consequences
A	Minor Injury
B	Major Injury
C	Death
D	Air Pollution
E	Water Pollution
F	Pollution of Land

5.3 In order to quantify the level of risk and identify the appropriate management procedures, the potential effects must be considered, as outlined in the table below:

Table 5.3 – Potential Effects

Abbreviation	Effect of Consequences	Management Required?
S	SEVERE	In all cases
Mo	MODERATE	In most cases
Mi	MILD	Occasionally
N	NEGLIGIBLE	No

Table 5.4 - Resultant Risk Matrix (Colour-Coded)

		Consequence			
		S	Mo	Mi	N
Probability	1	High	High	Medium	Low
	2	High	Medium	Low	Near-Zero
	3	Medium	Low	Near-Zero	N/A
	4	Low	Near-Zero	N/A	N/A

Accident/Incident Description	Likelihood of Accident/ Incident	Environmental Consequences of Accident/Incident	Potential Effects	Assessment Risk Outcome (Prior to Mitigation)	Measures to Prevent Accident/Incident Occurring	Assessment Risk Outcome (with mitigation)	Measures to be Taken in Event of Accident/Incident Occurring to Reduce Harm
Fire causing the release of fire and polluting materials to air (smoke or fumes). Incident could occur as a result of arson or other incidents	3	A,B,C,D	Mo	Low	<ul style="list-style-type: none"> Site benefits from security fencing/walls and monitored 24-hours per day to prevent unauthorised access Fire Prevention Plan (FPP) in place containing appropriate measures to reduce risk of fire during routine operation. Reference should be made to document ref 058-003-B for the sites FPP. 	Near-Zero	<ul style="list-style-type: none"> Reference should be made to the sites Fire Prevention Plan (ref 058-003-B and Site Environmental Management System (EMS) (ref 058-003-A) for procedures to be taken in the event of fire to reduce harm.
Vandalism	3	A,B,C,D	Mi	Near-Zero	<ul style="list-style-type: none"> Site to be securely fenced/walled and monitored 24-hours per day to prevent unauthorised access as detailed within the sites EMS (058-003-A) and FPP (058-003-B) 	Near-Zero	<ul style="list-style-type: none"> Inspection of all plant and machinery on-site for damage In the event that damage to plant and machinery identified which may lead to pollution, operation of equipment will cease until damage is rectified/repared In the event of spillages/leaks as a result of equipment damage, spill response procedure within site EMS will be followed Should spillages be considered likely to result in significant off-site impacts, the EA will be informed immediately. In the event of more serious event such as fire, the fire response procedures within the site FPP and EMS will be followed.

Accident/Incident Description	Likelihood of Accident/ Incident	Environmental Consequences of Accident/Incident	Potential Effects	Assessment Risk Outcome (Prior to Mitigation)	Measures to Prevent Accident/Incident Occurring	Assessment Risk Outcome (with mitigation)	Measures to be Taken in Event of Accident/Incident Occurring to Reduce Harm
Equipment malfunction/ breakdown	3	A,B,E,F	MI	Near-Zero	<ul style="list-style-type: none"> • Planning Preventative maintenance schedules to be in place for all plant and machinery to be used. • Plant and equipment inspected regularly to ensure they remain in good working order. 	Near-Zero	<ul style="list-style-type: none"> • In the event of equipment malfunction/breakdown please refer to Section 5.0 of the sites EMS (ref: 058-003-A) which has detailed emergency and contingency procedures outlining how the site will deal with equipment failure, breakdown and spillage. • Use of plant/machinery will cease until fault can be rectified.
Spillages of wastes/fuels	3	A,B,E,F	Mo	Low	<ul style="list-style-type: none"> • The site has procedures in place for fuel/oil storage on site are as follows: <ul style="list-style-type: none"> ○ The containers used for the storage of hazardous fluids will be surrounded by a bund capable of containing a minimum of 110% of the volume of fuel stored in the tank. ○ All pipework and associated infrastructure will be enclosed within the bund. ○ A lock will be fitted to the tank valve to prevent unauthorised operation. ○ Any storage of oil will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 SI No.2954 or any subsequent legislation. ○ All valves and gauges on the tank will be constructed to prevent damage caused by frost. ○ The tanks will be clearly marked showing their capacity and product within. 	Near-Zero	<ul style="list-style-type: none"> • In the event of spillages, please refer to Section 5.0 of the site's EMS (ref: 058-003-A).

Accident/Incident Description	Likelihood of Accident/ Incident	Environmental Consequences of Accident/Incident	Potential Effects	Assessment Risk Outcome (Prior to Mitigation)	Measures to Prevent Accident/Incident Occurring	Assessment Risk Outcome (with mitigation)	Measures to be Taken in Event of Accident/Incident Occurring to Reduce Harm
Flooding/abnormal weather such as heavy rainfall	3	A,B,C,D,E,F	Mo	Low	<ul style="list-style-type: none"> Site has drainage system in place to manage clean and foul drainage. Site is located within Flood Zone 2 and therefore at a medium risk of flooding In the event of heavy rainfall, fully treated water will not be discharged to the sewerage system to prevent surcharging of the foul sewer The operator will set up a notification alert with the Met office which ensures mitigation can be put in place prior to an extreme weather event. 	Near-Zero	<ul style="list-style-type: none"> Please refer to Section 5.0 of the sites EMS which details the procedures taken in the event of high winds, poor visibility, droughts and high rainfall or flood events. The site will cease operations during extreme weather events.
Explosions arising from the storage of gas	3	A,B,C,D,E,F	S - Mo	Medium	<ul style="list-style-type: none"> The propane tanks and digesters will be subject to daily visual inspections and a preventative maintenance regime which involves checking for structural integrity. The digesters will be fitted with over-pressure valves to ensure that an over-pressure can never occur in the tank that could lead to structural failure. The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document). All equipment in areas with risk of explosion will be installed in accordance with ATEX and DSEAR regulations 	Low	<ul style="list-style-type: none"> In the event of an emergency i.e. an explosion please refer to Section 5.0 of the sites EMS (ref: 058-003-A) which has detailed emergency and contingency procedures outlining how the site will deal with an emergency. Please refer to Section 6.0 of this AMP document; If necessary, operations will cease and the site will be evacuated to an area which is away from the hazard.

Accident/Incident Description	Likelihood of Accident/ Incident	Environmental Consequences of Accident/Incident	Potential Effects	Assessment Risk Outcome (Prior to Mitigation)	Measures to Prevent Accident/Incident Occurring	Assessment Risk Outcome (with mitigation)	Measures to be Taken in Event of Accident/Incident Occurring to Reduce Harm
Transferring of substances	3	A,B,C,D,E,F	Mo	Low	<ul style="list-style-type: none"> As stated above, the tanks and digesters will be subject to daily visual inspections and a preventative maintenance regime which involves checking for structural integrity. The transfer of liquid substances and removal of digestate will be carried out using an enclosed line. 	Near-Zero	<ul style="list-style-type: none"> In the event of spillages, please refer to Section 5.0 of the site's EMS (ref: 058-003-A).
Release of Biogas	3	A,B,C,D,E,F	S - Mo	Medium	<ul style="list-style-type: none"> As stated above, the entire AD plant will be subject to daily visual inspections and a preventative maintenance regime which involves checking for structural integrity. The digesters will be fitted with over-pressure valves to release biogas. The SCADA system will monitor the entire site process (Details of the SCADA system are shown in Appendix II of this document). 	Low	<ul style="list-style-type: none"> In the event of an emergency i.e. the release of biogas please refer to Section 5.0 of the sites EMS (ref: 058-003-A) which has detailed emergency and contingency procedures outlining how the site will deal with an emergency. Please refer to Section 6.0 of this AMP document; If necessary, operations will cease and the site will be evacuated to an area which is away from the hazard.

Accident/Incident Description	Likelihood of Accident/ Incident	Environmental Consequences of Accident/Incident	Potential Effects	Assessment Risk Outcome (Prior to Mitigation)	Measures to Prevent Accident/Incident Occurring	Assessment Risk Outcome (with mitigation)	Measures to be Taken in Event of Accident/Incident Occurring to Reduce Harm
Explosion Zones	3	A,B,C,D,E,F	S - Mo	Medium	<ul style="list-style-type: none"> Given the nature of the process, certain areas of the site are designated as explosion zones; potential sources of ignition are strictly prohibited. Within the designated explosion zone, the only equipment permitted for use are items of plant and equipment which meet the requirements of the 'Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 1996'. Signs are to be erected on site to notify staff of explosion zones. All equipment in areas with risk of explosion, will be installed in accordance with ATEX and DSEAR regulations 	Low	<ul style="list-style-type: none"> In the event of an emergency i.e. an explosion please refer to Section 5.0 of the sites EMS (ref: 058-003-A) which has detailed emergency and contingency procedures outlining how the site will deal with an emergency. Please refer to Section 6.0 of this AMP document; If necessary, operations will cease and the site will be evacuated to an area which is away from the hazard.

6 Reporting

6.1 All incidents/ accidents are responded to promptly with a clear step by step procedure. This includes informing the site management and the emergency services of the incident.

6.2 In addition to obligations imposed by RIDDOR '13 (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013) the permit holder will notify the EA of any serious injuries to employees of Stanton Energy Ltd, other site users or members of the public arising as a result of operations on site. Minor injuries such as cuts and grazes etc. will be recorded in the accident book on site. Separate procedures will be used for different types of emergency. An emergency at the site is defined by the site management as follows:

“Any incident which is likely to result in harm to human health or pollution of the environment or serious breach of permit conditions and serious detriment to the amenities of the locality.”

6.3 For all emergency situations, the deposit of any further waste will be suspended where necessary to allow action to be taken safely. If necessary, staff and other users of the site will be evacuated to an area which is a safe distance away from the hazards. Staff handling the emergency will be provided with and trained to use the necessary PPE (personal protective equipment) unless the manager instructs them that the hazard is too severe and outside help is needed from the emergency services or specialist waste contractors. A visitor's book will be kept to check who is on site at all times.

7 Training

7.1 Staff Training

7.1.1 Operational staff will be subject to site inductions which includes basic emergency procedures by site management. If necessary, a third-party consultant will be contacted to carry out additional training.

7.1.2 A full test (drill) of the controls and procedures in this document will be carried out every 12 months to test that the plan works. The outcome and any follow up training for staff will be documented in the site diary and relevant forms in the EMS.

7.1.3 Further details on training are detailed within the site's EMS (Ref: 058-003-A)

7.2 Toolbox talks

7.2.1 All operational staff including will receive training / toolbox talks by trained site management to minimise the chance of an accident occurring, which will also include the procedures within other management plans.

8 Review of AMP

- 8.1 This AMP will be reviewed annually, or sooner in the event of significant accident/incident.

Appendix I

Drawings

Appendix II

Details of the SCADA System