Draft generic risk assessment for draft standard rules set number SR2009No22

Activity type: Waste Operation: Storage of digestate from anaerobic digestion plants

Permit Holder: Applies to all potential permit holders.

Location: Applies to all potential locations.

Location of environmentally sensitive sites (km / m): Not within 200m (see below)

Risk assessment carried out by: Environment Agency

Date: 20 February 2009

The scope of the standard permit is defined by the following risk criteria:

Parameter 1	Permitted activities - Storage (R13) in lagoons.
Parameter 2	Permitted waste types -digestate from anaerobic digestion plants
Parameter 3	Permitted quantity of wastes - maximum throughput 75000 tonnes per year
Parameter 4	The activities shall not be carried out within groundwater source protection zone 1.
Parameter 5	The activities shall not be carried out within 50 metres from any spring or well, or from any borehole not used to supply water for domestic or food production purposes; and 250 metres from any borehole used to supply water for domestic or food production purposes.
Parameter 6	The activities shall not be carried out within 200m of a European site (SAC, SPA), Ramsar site of Site of Special Scientific Interest (SSSI).
Parameter 7	The activities shall not be carried out within 200m of any offsite building used by the public ,including dwelling houses.

Data and information				Judgement				Action (by permitting)	
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? (This residual risk will be controlled by Compliance Assessment).**
Local human population	Release of particulate matter (dust)	Harm to human health - respiratory irritation and illness	Air transport then inhalation	Low	Medium	**Low**	There is potential for exposure if anyone living or working close to the site (excluding operator and employees)	Appropriate measure taken to prevent fugitive emissions. Fugitive emissions management plan	Low
Local human population	Release of particulate matter (dust)	Nuisance - dust on property (cars, clothing etc.)	Air transport then deposition	Low	Low	**Low**	As above	As above	Low
Local human population and environment	Releases of methane/ammonia	Harm to human health - respiratory irritation and illness.	Air transport then inhalation	Medium	Medium	**Medium**	methane can be produced if digestate has not had appropriate retention time at the AD plant	Fugitive emissions plan needs to include ammonia/methane. Lagoons should be covered.	Low

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Local human population, livestock and wildlife	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition.	Low	Low	**Low**	Litter not associated with permitted waste	Appropriate measure taken to prevent fugitive emissions. Fugitive emissions management plan (if required)	Very low
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity and road traffic accidents	Vehicles entering and leaving the site.	Medium	Medium	**Medium**	Local residents often sensitive to mud on roads.	As above. Appropriate measures could include clearing waste, litter and mud arising from the activities from affected areas outside the site.	Low
Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation	Medium	Medium	**medium**	Local residents often sensitive to odour, If digestate not stable then methane and other gases may be vented	Appropriate measure taken to prevent odour. Odour management plan. (if required). Lagoons to be covered.Activities not to be within 200 metres of buildings	Low
Local human population	Noise from machinery	Nuisance, loss of amenity, loss of sleep	Noise through the air and vibration through the ground.	Medium	Low	**Medium**	Local residents often sensitive to noise and vibration	Appropriate measures taken to ensure levels of noise and vibration likely to cause annoyance outside the site are prevented or minimised. Noise and vibration management plan (if required).	Low

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Local human population	Scavenging animals and scavenging birds	Harm to human health from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land.	Low	Medium	**Low**	Scavenging birds and animals not normally associated with permitted activity	Appropriate measures taken to prevent or minimise nuisance from scavenging birds or animals.	Very low
Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land.	Low	Medium	**Low**	Insect pests not normally associated with permitted activity	As above.	Very low
Local human population and local environment.	Flooding of site	Potential for erosion of deposited waste.	Flood waters	Low	Low	**Low**	Permitted waste types are non-hazardous and contained.	The operator is required to maintain and implement an accident management plan.	Low
Local human population and/or livestock after gaining unauthorised access to the waste operation.	All on-site hazards. Wastes, machinery and vehicles.	Bodily injury	Direct physical contact	Medium	Medium	**Medium**	Permitted waste types are non-hazardous.	Operations must be managed and operated in a coordance with a management system (this includes site security measures to prevent unauthorised access.	Low
Local human poulation and local environment	Arson and or vandalism 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 firefighters. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Very Low	Very Low	**Very Low**	Waste is not readily combustible. Permitted waste types are non-hazardous.	As above. The operator is required to maintain and implement an accident management plan.	Very Low
Local human population and local environment.	Accidental fire causing the release of polluting materials to air (smoke or fumes), waste or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land.	As above.	Low	Low	**low**	Waste is normally moist so not readily combustible. Permitted waste types are organic and non-hazardous.	As above. Permitted activities do not include the burning of waste.	Low

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All surface waters close to and downstream of the site.	Contaminated run-off from waste	Acute effects; oxygen depletion, fish kill and algal blooms.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Medium	**Low**	Unlikely to be any contaminated run-off reaching watercourse.	Rules require all digestate to be contained. SR also states that there shall be no fugitive emissions of substances that will cause pollution.	Low
All surface waters close to and downstream of the site.	Contaminated run-off from waste	Chronic effects; deterioration of water quality	As above. Indirect run-off via the soil layer.	Low	Medium	**Low**	Unlikely to be any contaminated run-off reaching watercourse.	As above.	Low
Abstraction from watercourse downstream of facility (for agricultural or potable use)	Contaminated run-off from waste	Acute effects; closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Low	Medium	**Low**	Watercourse must have medium / high flow for abstraction to be permitted. Unlikely to be any contaminated run-off.	As above.	Low
Groundwater	Contaminated run-off from waste	Chronic effects; contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Low	Medium	**Low**	Disposal activities unlikely to produce significant quantities of contaminated run-off.	Rule requires that no emission from the permitted activity shall give rise to the introduction into groundwater of any substance in List I, any substance in List II so as to cause pollution. Rule also states that there shall be no fugitive emissions of substances that will cause pollution.	Low

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Groundwater and surface water	Fire on site leading to run-off from polluted fire fighting waters.	Contamination of groundwater and aquatic ecosystems.	Direct and indirect run-off	Low	Low	**Low**	Risk of deliberate or accidental combustion of waste is low.	Rule requires an accident management plan that will cover fire prevention and control measures etc. Permitted activities do not include the burning of waste.	Very Low
Local human population	Smoke from burning waste	Nuisance, loss of amenity, loss of sleep; respiratory irritation / illness	Air transport	Low	Low	**Low**	Risk of deliberate or accidental combustion of waste is low.	Rule requires an accident management plan that will cover fire prevention and control measures etc. Permitted activities do not include the burning of waste.	Very Low
Protected sites - Eorupean sites and SSSIs	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Low	Medium	**Medium**	Waste disposal operations can cause deterioration of nature conservation sites.	The activities cannot take place within 500m of a European site or SSSI. (Distance criteria agreed with Natural England/Countryside commission for Wales).	Low