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Environmental Risk Assessment

v1.0

Environmental and sustainability solutions provided to
Enva Scotland Ltd



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REVISION LOG

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1.0 INTRODUCTION

This Environmental Risk Assessment has been produced in support of a bespoke permit application for Enva Scotland Ltd (hereon referred to as 'Enva'), who provide specialist liming services to the wastewater sector. Enva currently provide biosolid liming services on utility company sites and have identified a site at West Shaw Farm, Banard Castle, Barnard Castle, DL12 8UT for acceptance and treatment of non-compliant sludges and are seeking a bespoke permit application for the operation of a liming facility. This document provides a full environmental risk assessment for the activities associated with the liming operation.

1.1 Site Address

Enva Scotland Ltd Biosolids Liming Facility,
West Shaw Farm
Barnard Castle
County Durham
DL12 8UT

1.2 Site grid reference:

NZ 08300 16981

1.3 Reason for application

The site previously held a Standard Rules Permit SR2008No 19 - 75kte-Non-Hazardous Sludge Biological, Chemical and Physical Treatment Site which has now been revoked upon review of several Standard Rules Permits by the EA. The site is now seeking a Bespoke Environmental Permit for the operation of a biosolids liming facility.

1.4 Assessment process

The Guidance "Risk assessments for your environmental permit" produced by the Environment Agency and DEFRA outlines a five-step process for assessing the site activity and the risk to local amenity to successfully produce an Environmental Risk Assessment:

Identify and consider risks for your site, and the sources of the risks.

1. Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.
2. Identify the possible pathways from the sources of the risks to the receptors.
3. Assess risks relevant to your specific activity and check they're acceptable and can be screened out.
4. State what you'll do to control risks if they're too high.

This risk assessment will identify the potential human and environmental impacts that could result from the activity of this energy from waste plant. Risk assessments will be carried out for the following hazards:

- Odour;
- Fugitive emissions (including dust and pests);
- Visible plumes;
- Noise;
- Fire.

This risk assessment will identify people or parts of the environment that could be harmed by the activity and carry out risk assessments for these potential sources. Assessment of potential accidents at the facility and the consequential effects on sensitive receptors have been accounted for in a separate Accident Management Plan.

2.0 ASSESSMENT

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Fugitive emissions of dust, fibres and particulates.	Deposition from air and inhalation.	Local Human Population.	Med	High	Med	Permitted waste types do not include wastes which consist solely of dusts, powders or loose fibres. Dust from lime handling is controlled through enclosed delivery systems and appropriate personal protective equipment (PPE). The site layout minimises wind exposure and fugitive emissions. Activities on site have the potential to produce dust and so a medium magnitude risk is estimated.	- The site will be kept clean and dust suppression will be used on the site when required. - The site layout minimises wind exposure and fugitive emissions. - In dry weather, site access and internal roads will be swept manually or mechanically when necessary. - Road sweeper present on site if necessary. - Daily site inspections. - The site has an Environmental Management Plan and an Appropriate Measures Assessment.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Airborne particulates generated during the physical treatment of Non-Hazardous Waste: treatment of residual sludge from sewage plants treating domestic or urban waste waters.	Inhalation and ingestion.	Human Health	Low	High	Med	Potential for frequent and long-term exposure to sensitive receptors (apart from licence holder/operator and employees). Dust from lime handling is controlled through enclosed delivery systems and appropriate personal protective equipment (PPE). The site layout minimises wind exposure and fugitive emissions.	- The site will be kept clean and dust suppression will be used on the site when required. - In dry weather, site access and internal roads will be swept manually or mechanically when necessary. - Road sweeper present on site if necessary. - Daily site inspections. - The site has an Environmental Management System and an Appropriate Measures Assessment.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Airborne dust particulates.	Deposition from air.	Human Health	Med	Low	Med	Potential for frequent and long-term exposure to sensitive receptors (apart from permit holder/operator and employees).	- The site will be kept clean and dust suppression will be used on the site when required. - In dry weather, site access and internal roads will be swept manually or mechanically when necessary. - Road sweeper present on site if necessary. - Daily site inspections. - The site has an Environmental Management System and an Appropriate Measures Assessment.	Low
Noise from machinery.	Air transport.	Human Health	Med	High	Med	Neighbouring residents and businesses often sensitive to noise and likely to complain.	- Machinery maintenance schedule. - All machinery is designed to work efficiently and not produce excessive noise. - All machinery is switched off when not in use. - Plant and equipment are maintained to reduce noise emissions, with operational hours and activity	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							locations selected to minimise off-site impacts. - Reversing beepers set to a level to minimise distraction at adjacent properties without compromising safety. - The location of the site in a largely rural area means the likelihood of causing noise nuisance is unlikely. - Environmental Management System and Appropriate Measures Assessment. - Appropriate PPE provided to staff.	
Fugitive releases of litter.	Air transport.	Human Population	Med	Low	Med	Local businesses sensitive to litter and likely to complain.	- Wastes are inspected on arrival and turned away if contamination levels exceed maximum permissible levels. - Liming processing operation shall not accept wastes with significant presence of paper, plastic etc. - Containers that hold light materials such as paper and plastic are	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							sheeted for transport and if held on site. Daily inspection of site and removal of litter.	
Fugitive releases waste, litter and mud on local roads.	Vehicles entering and leaving site.	Human Population	Med	Med	Med	Local residents often sensitive to mud on roads and likely to complain.	- Daily inspection of site roads and surrounds for debris. - No domestic residences within 500m of the site - Access road swept when required.	Low
Odour from recovery operations.	Air transport.	Human Population	Low	Med	Med	Local businesses and residents often sensitive to odour and likely to complain if unpleasant odour.	- Sealed trailers, controlled unloading, minimised exposure time, staff supervision - Storage duration limits, containment on engineered pads, rapid progression to liming, runoff control - Lime dosing under documented process plan, target pH, controlled	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							mixing, minimum residence time; operator competence training • Maintain elevated pH, stock rotation, covering if required • Trained operators, good housekeeping, minimised handling of odorous material • Pre-acceptance checks, waste characterisation or rejection; post-liming verification if required • Suspension of acceptance, isolation of untreated sludge, rapid repair or restoration of operation, enhanced monitoring • Operational curtailment, schedule adjustments, enhanced monitoring during adverse conditions • Minimum staffing thresholds, suspension of high-risk activities, operator training	

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							- Containment, recovery, lime stabilisation, operational procedures for emergency response. - Odour Management Plan. - Appropriate Measures Assessment.	
Fire.	Spontaneous combustion of dry materials.	Site operators and assets	Low	High	Med	Lots of different waste types may be accepted on to site with differing levels of combustibility.	- The site operates with an approved Accident Management Plan. - Appropriate Measures Assessment. - Fire extinguishers are located across site to fight fires in site buildings, site office, and in vehicles and machinery. - Residual sludge from sewage plants treating domestic or urban waste waters has high moisture content.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Smoke from a fire.	Air transport.	Human Population	Low	Med	Med	Local businesses often sensitive to odour and likely to complain. Fires can be deliberate or accidental.	- Permitted activities do not authorise burning of waste. - Accident Management Plan details consequences and control of fires. - Fire suppression equipment located on site. - Appropriate Measures Assessment.	Low
Scavenging birds and animals.	Air transport and over land.	Human Population	Low	Low	Low	Scavenging birds and vermin attracted to site and affecting neighbouring businesses.	- No history of significant problems with rodents or flies. - EMS details management of pests. - Visual inspection for signs of pests is carried out as part of site walkover. - Contractual arrangement with professional pest controller for regular checks can be arranged if required. - Housekeeping.	Very Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Pests e.g. flies.	Air transport and over land.	Human Population	Low	Low	Low	Insect pests can multiply on some permitted waste types particularly in summer months.	- No history of significant problems with rodents or flies. - Visual inspection for signs of pests is carried out as part of site walkover. - Contractual arrangement with professional pest controller for regular checks can be arranged if required. - Housekeeping.	Low
All on-site hazards: wastes; machinery and vehicles.	Direct physical contact.	Human population. Local environment.	Med	High	High	Delivery vehicles and mobile plant actively moving around the site.	- No public access to the site. - Palisade fencing around the perimeter of the site. - Signs onsite outlining risks. - Wastes will be accepted under the supervision of a technically competent manager. - Wastes will be stored within designated waste storage area.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							- Traffic management flows. - Reversing sounds on vehicles and mobile equipment.	
Leachate with high organic content	Surface runoff	Surface Water	Med	Low	Med	Waste types that could generate leachate are non-hazardous.	- All leachate generating material stored impermeable concrete with a sealed drainage system. - Accident Management Plan and emergency procedures outline a methodology for loss of site liquid wastes/leachate to surface waters.	Low
Leachate from material with high organic content.	Direct surface runoff from site pad.	Surface Water	Med	Med	Med	Waste types that could generate leachate are non-hazardous. Potential leachate spill into foul sewer.	- All material stored on an impermeable pavement with sealed drainage system. - Rainwater falling on the treatment and storage areas is collected in the catchment tank prior to treatment offsite to a recognised waste management facility or recycled on site into the sewage cake. - All leachate generating material stored inside on impermeable	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							concrete with a sealed drainage system. • Accident Management Plan.	
Leachate with high organic content.	Permeate flow through soil.	Groundwater	Low	High	High	Site located within groundwater source protection zone III - Total Catchment. Site located within Drinking Water Safeguard Zones (Surface and Groundwater) Site located outside a Drinking Water Protected Area (Surface Water)	• Impermeable pavement. • Sealed drainage system. • Rainwater falling on the treatment and storage areas is collected in the catchment tank prior to treatment offsite to a recognised waste management facility or recycled on site into the sewage cake.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Spillages of liquids.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All surface waters close to and downstream of site. Acute effects: oxygen depletion, fish kill and algal blooms.	Med	High	High	Liquid waste accepted onto and processed on site. All surface water on site will be discharged to combined sewer under discharge consent.	- Impermeable concrete surface with falls towards drains prevents run-off from flowing off site. - All surface waters generated on site are captured via surface drains points and the site's sealed drainage system. - Liming materials, brought onto the site to treat the non-compliant sewage cake, will be stored in sealed containers. Lime will only be accessed when required for treatment operations. - Fuel tanks are double skinned or held within leakproof bunds capable of retaining a volume that is 110% of the largest container. - Spill kits and drain cover mats present on site for use if a spill is detected.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							- Routine inspection and maintenance of fuel tank and site surface. - The site drainage system is detailed in the Environmental Management System and Appropriate Measures Assessment. - Emergency procedures are outlined in the Accident Management Plan. - Staff training on spillages.	
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by run off or via drainage system.	Human population and environment.	Med	Med	Med	Extremely rare – appropriately stored waste, fuel and limited sources of ignition. Waste accepted onto site has low flammability. Waste fires are not common but approximately 300 fires per year are linked to waste activities. Impact on health and amenity	- Permitted activities do not authorise burning of waste. - Continued acceptance of low flammable wastes on the allowable input list. - Segregation of waste types on site. - Accident Management Plan. - Appropriate Measures - Complaints procedure and investigation. - Daily site inspection and housekeeping measures.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
						can be significant for many days or weeks.	- Waste is stored in a designated storage area. - Monitoring of storage capacity.	
Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Air transport of smoke. Spillages and contaminated firewater by run-off to or via drainage system.	Human population and local environment	Med	High	High	Proximity of sensitive receptors.	- No public access to the site. - Remote rural location - Accident Management Plan.	Low
Any	Any	Protected sites - European sites and SSSIs	Med	High	High	Waste operations may cause harm to and deterioration of nature conservation sites.	There are no SSSIs within 1km of the site.	Very Low
P = Possibility C = Consequence M = Magnitude								