



# Environmental Risk Assessment



Birch Airfield Composting





# Report produced for Birch Airfield Composting Services Limited

Provided by Walker Resource Management Ltd (WRM)

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## 1.0 INTRODUCTION

This Environmental Risk Assessment has been produced in support of permit variation application for the addition of the treatment of inert soils by Birch Airfield Composting Services Limited (hereon referred to as BACS), Essex. This document provides a full environmental risk assessment for the proposed treatment of inert soils. This document been produced in conjunction with the following documents:

- BAC- Non-Technical Summary
- BAC- Site Management System
- BAC - Dust Management Plan
- BAC - Drainage Management Plan
- BAC - Fugitive Emissions Management Plan
- BAC - Noise and Vibration Management Plan
- BAC - Accident Management Plan
- BAC - Energy Efficiency Plan
- BAC - Odour Management Plan
- BAC - Site Layout Plan

### 1.1 Reason for Application

BACS is currently permitted to treat up to 75,000 tonnes per year of organic waste via open windrow composting and for the treatment of inert waste soil for blending under a bespoke installation permit. In line with the planned variation BACS are increasing treatment throughput at the site to 100,000 tonnes per year of organic waste.

### 1.2 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:

1. Identify and consider risks for your site, and the sources of the risks.
2. Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.
3. Identify the possible pathways from the sources of the risks to the receptors.
4. Assess risks relevant to your specific activity and check they’re acceptable and can be screened out.
5. 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.

Sector Guidance Note 2.8<sup>1</sup> page 76, point 8, states that there should be an accident plan in place which identifies the likelihood of consequences of accidents and also identifies the actions required to prevent accidents and mitigate any consequences. Assessment of potential accidents at the facility and the consequential effects on sensitive receptors have been accounted for in this document.

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<sup>1</sup> Environment Agency. Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste. Sector Guidance Note S5.06

## 2.0 ENVIRONMENTAL MANAGEMENT

P = Possibility C = Consequence M = Magnitude

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Airborne particulates generated during composting recovery process and by the movement of vehicles onsite.	Inhalation and ingestion.	Human Health	Low	High	Med	Potential for frequent and long-term exposure if anyone is living or working close to the site (apart from licence holder/operator and employees).	<ul style="list-style-type: none"> <li>The site will be kept clean and dust suppression will be used as and when needed.</li> <li>Material will be assessed by site prior to processing and water can be added if required to increase the moisture content.</li> <li>Material will be maintained at a moisture content of between 40-60% during the composting recovery process. Monitoring of visible emissions will occur during site operations.</li> <li>A site speed limit of 5mph will be enforced for vehicles.</li> </ul>	Low
Airborne particulates generated during the physical treatment of Non-Hazardous Waste: conditioning and screening of	Inhalation and ingestion.	Human Health	Low	High	Med	Potential for frequent and long-term exposure if anyone is living or working close to the site (apart from licence	<ul style="list-style-type: none"> <li>The site will be kept clean and dust suppression will be used as and when needed.</li> <li>Screening or blending of material will not take place during excessively windy conditions.</li> <li>Blending of inert soil with compost will be carried out in a</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
imported soil wastes and by movement of vehicles onsite.						holder/operator and employees).	<p>controlled manner, with consideration given to the potential for dust generation at all times.</p> <ul style="list-style-type: none"> <li>A site speed limit of 5mph will be enforced for vehicles.</li> </ul>	
Airborne dust particulates.	Deposition from air.	Human Health	Med	Low	Med	Potential for frequent and long term exposure for people working close to the site (apart from licence holder/operator and employees).	<ul style="list-style-type: none"> <li>Most waste inputs will have high moisture content so the production of dust will be minimal.</li> <li>The site will be kept clean and dust suppression will be used as and when needed.</li> <li>Material will be assessed by site prior to processing and water can be added if required to increase the moisture content.</li> <li>Daily site inspections</li> <li>Dust suppression as and when required</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Noise from machinery.	Air transport.	Human Health	Med	High	Med	Neighbouring business often sensitive to noise and likely to complain.	<ul style="list-style-type: none"> <li>• Machinery maintenance schedule.</li> <li>• All machinery is designed to work efficiently and not produce excessive noise.</li> <li>• All machinery is switched off when not in use.</li> <li>• The location of the site means the likelihood of causing noise nuisance is unlikely.</li> <li>• Loading shovels are fitted with white noise reversing alarms.</li> <li>• Monitoring can be undertaken by a qualified sub-contractor if required.</li> <li>• Appropriate PPE provided to staff.</li> </ul>	Very low
Fugitive releases of litter.	Air transport.	Human Population	Med	Low	Med	Local residents/local farmers/local businesses sensitive to litter and likely to complain.	<ul style="list-style-type: none"> <li>• Wastes are inspected on arrival and turned away if contamination levels exceed levels stated in the sites Standard Operating Procedures.</li> <li>• Daily inspection of site and removal of litter</li> </ul>	Low



Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
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.	<ul style="list-style-type: none"> <li>Daily inspection of site roads and surrounds for debris.</li> <li>Access road swept when required.</li> </ul>	Low
Odour from recovery operations.	Air transport.	Human Population	Low	Med	Med	Local businesses often sensitive to odour and likely to complain if unpleasant odour.	<ul style="list-style-type: none"> <li>Excessively odorous waste is not accepted onto site.</li> <li>Housekeeping and removal of spillages and debris.</li> <li>Daily odour monitoring on site, around the site boundary and investigation of incidents.</li> <li>Maintain aerobic conditions.</li> <li>Regular turning of windrows and temperature control.</li> <li>Complaints procedure and investigation.</li> <li>Odour Management Plan.</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Fire.	Spontaneous combustion of dry materials.	Site operators and assets	Low	High	Low	Moisture of material is maintained.	<ul style="list-style-type: none"> <li>• Fire Prevention Plan</li> <li>• Compost moisture contained between 40-60%.</li> </ul>	Low
Smoke from a fire.	Air transport.	Human Population	Med	Med	Med	Local residents / businesses often sensitive to odour and likely to complain. Fires can be deliberate or accidental.	<ul style="list-style-type: none"> <li>• Licensed activities do not permit burning of waste.</li> <li>• Accident Management Plan details consequences and control of fires.</li> <li>• Fresh waste and windrows will be monitored for hot spots.</li> <li>• Fire suppression equipment located on site.</li> <li>• Fire Prevention Plan.</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Scavenging birds and animals.	Air transport and over land.	Human Population	Med	Med	Med	Scavenging birds and vermin attracted to site and affecting neighbouring businesses.	<ul style="list-style-type: none"> <li>• Pest control measures implemented across site e.g. bait boxes.</li> <li>• Bait points thoroughly inspected on three-weekly basis.</li> <li>• Visual inspection for signs of pests is carried out as part of site walkover.</li> <li>• Contractual arrangements in place with professional pest controller for regular checks.</li> <li>• Housekeeping.</li> </ul>	Low
Pests e.g. flies.	Air transport and over land.	Human Population	Med	Med	Med	Insect pests can multiply on some permitted waste types particularly in summer months.	<ul style="list-style-type: none"> <li>• Pest control measures implemented across site e.g. bait boxes.</li> <li>• Bait points thoroughly inspected on three-weekly basis.</li> <li>• Visual inspection for signs of pests is carried out as part of site walkover.</li> <li>• Bait boards and red top fly bags may be installed around the site to control the infestation of flies if required.</li> <li>• Fly paper used on site to control flies.</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
							<ul style="list-style-type: none"> <li>Contractual arrangements in place with professional pest controller.</li> <li>Housekeeping.</li> </ul>	
All on site hazards particularly relating to material handling and storage activity.	Direct physical contact.	Human Population	Med	Med	Med	Waste types are non-hazardous.	<ul style="list-style-type: none"> <li>Signs outlining onsite risks.</li> <li>All wastes to be accepted are non-hazardous.</li> </ul>	Low
Leachate with high organic content	Surface runoff	Surface Water	Med	Low	Med	Waste types are non-hazardous.	<ul style="list-style-type: none"> <li>All material stored on an impermeable pavement and contained drainage.</li> <li>Accident management plan and emergency procedures outline a methodology for loss of site liquid wastes/leachate to surface waters.</li> </ul>	Low



Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Leachate from material with high organic content.	Direct surface run off from site pad.	Surface Water	Med	Med	Med	Waste types are non-hazardous. Potential leachate spill into low flow watercourse. Harm is temporary and reversible.	<ul style="list-style-type: none"> <li>All material stored on an impermeable pavement and contained drainage.</li> <li>All leachate is fed to 2No. of lagoon located next. These are located next to the existing composting pad and proposed site extension area composting pad. Proceeding storage leachate is re-circulated through the composting process only where the addition of moisture is identified through the operating procedures monitoring.</li> <li>Accident Management Plan.</li> </ul>	Low
Leachate with high organic content.	Permeate flow through soil.	Groundwater	Low	High	High	Site located outside groundwater source protection zones.	<ul style="list-style-type: none"> <li>Impermeable pavement.</li> <li>Contained drainage system.</li> <li>All leachate is fed to the lagoons located next to the existing composting pad and proposed site extension area composting pad. Proceeding storage it is re-circulated through the composting process only where the addition of moisture is identified through the operating procedures monitoring.</li> </ul>	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Fire on site leading to run off from polluted fire fighting waters.	Direct and indirect run off.	Groundwater	Med	High	Med	Fires can be deliberate or accidental.	<ul style="list-style-type: none"> <li>Impermeable pavement.</li> <li>Contained drainage system.</li> <li>Accident Management Plan.</li> <li>Fire Prevention Plan.</li> </ul>	Low
P = Possibility C = Consequence M = Magnitude								

## 3.0 ACCIDENT MANAGEMENT

### 3.1 Emergency Contacts

Emergency Services	999
Local Police	101
Environment Agency Hotline	0800 807 060
Health and Safety Executive	0345 300 9923
Electricity Supplier	On-site solar farm
Local Authority	Colchester Borough Council – 01206 282222
Waste Disposal Contractor	Essex County Council – contamination/reject fraction CSH Environmental – Fine oversize containing plastics.
Gas Supplier	N/A
Sewerage Undertaker	Anglian Water – 0800 771881
Fuel Supplier	Anglia Farmers (fuel broker) – 01603 881 881

### 3.2 Company Contact (Out of Hours)

Director Angela Morton  
Mobile: 07747866923

### 3.3 Environmental Accident Management Plan

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Consequences	Actions to be taken
Plant Failure (Hydraulic Leaks, Damaged equipment)	Potentially polluting liquids leak into the building where the plant is housed or onto the hard surfaced ground outside.	Environment	Low	Med	Low	Low - Very little likelihood of occurrence. All equipment subject maintenance regime. Site has a concrete bund wall surrounding the site which contains an existing draining system.	Potentially polluting liquids flow onto hard surfaced area of facility.	<ul style="list-style-type: none"> <li>Stem leak if possible.</li> <li>Inform site manager.</li> <li>Isolate spill using spill control kits or adsorbent material.</li> <li>Monitor leak and prevent any liquid from entering drains.</li> <li>Drain any contaminated tanks, clean any spillage and dispose of waste as appropriate.</li> <li>Monitor external areas to ensure no further contamination.</li> <li>Record the incident.</li> <li>Inform Local Authority or Environment Agency if necessary.</li> <li>Review Operations and Management System.</li> </ul>
Severe Weather	Flooding Wind damage Ice/frost	Plant & Equipment  Site Conditions	Low	Med	Low	Low - Flooding unlikely due to location of site and existing drainage system already present on site.  All plant securely fixed with some housed inside a building.	Damage to plant and equipment	<ul style="list-style-type: none"> <li>Cease operations if required.</li> <li>Assess damage.</li> <li>Mitigate any pollution caused.</li> <li>Inform site manager.</li> <li>Inform Local Authority or Environment Agency if necessary.</li> <li>Repair damage.</li> <li>Record incident.</li> </ul>



Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Consequences	Actions to be taken
Arson/ Vandalism	N/A	Plant & Equipment  Site Conditions	Low	Med	Low	Low - Site to be as secure as possible. Perimeter of site is fenced. All plant to be locked when not manned. All doors and gates locked outside working hours.  The site has no public access. CCTV with remove access and recording capabilities in place on site.	Damage to equipment  Fire  Litter	<ul style="list-style-type: none"> <li>Assess damage.</li> <li>Mitigate any damage/pollution caused (following fire plan).</li> <li>Inform site management.</li> <li>Inform Police.</li> <li>Inform Local Authority if required.</li> <li>Record incident.</li> <li>Review site security.</li> </ul>
Fire	Spread from source of ignition	Site buildings  Local Residents	Low	Med	Med	Med - No ignition sources permitted near flammable material.  Fuel must be stored to prevent fire.	Fire could spread to site buildings and potentially to neighbouring sites, subject to wind direction and strength.  Potential for severe damage to property and potential loss of life from fire/smoke inhalation.	<ul style="list-style-type: none"> <li>Raise alarm on site.</li> <li>Call 999.</li> <li>Ensure personnel are alerted evacuated and accounted for from danger area, following the fire evacuation plan.</li> <li>If safe, switch off electricity/fuel supplies.</li> <li>Inform site management.</li> <li>Liaise and follow instructions of emergency team making them aware of any hazards on site.</li> <li>Any fire water treated/disposed of appropriately.</li> </ul>
<p>P = Possibility    C = Consequence    M = Magnitude</p>								





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