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NON-TECHNICAL SUMMARY

Environmental solutions provided to
BIRCH AIRFIELD COMPOSTING SERVICES LIMITED

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Document Title	Non-Technical Summary
Client	Birch Airfield Composting Services Limited
Revision	v1.0
Date	17/04/2024
Document Reference	BAC_NTS
Project Reference	1321/J05
Author: Joel Pimm	Reviewer: Martin Ropka

REVISION LOG

Revision	Details	Date
0.1	Initial draft	27/02/2024
0.2	Internal review	12/03/2024
1.0	First Issue	17/04/2024

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1.0 INTRODUCTION

1.1 Site Address

Birch Airfield,
Birch,
Blind Lane,
Colchester, Essex
CO5 9XE

Grid Reference: Easting 591122, Northing 219697

1.2 Site Description

The site is located on an old RAF airfield situated approximately 3km northeast of Tiptree and 10km southwest of Colchester. The site comprises of three areas:

- The reception area where waste is tipped and inspected.
- The operational area where the waste is shredded, windrows formed and aerated, and inert soil waste is blended with compost.
- The storage area where the composted material is stored, awaiting final use off-site.

There is a port-a-cabin site office on site providing a mess room, toilet and wash facilities and hot and cold water.

1.3 Permits and Licences

The site has previously varied their SR2021 No1 (previously SR2012 No 8) Standard Rules permit (EPR/HP3294NJ) with a total permitted throughout of 75,000 tonnes per annum to a bespoke installation permit to allow for the physical treatment of inert soils. The inert soils are processed and blended with 10mm compost, to produce a topsoil certified to BS 3882.

1.4 Planning Permissions

The site operates under full planning permission (Reference Number: ESS/11/04/COL).

1.5 Reason for Application

Birch Airfield Composting Services Ltd (hereon referred to as BACS) are seeking consent to vary their bespoke environmental permit to increase the throughput of material at the site

from 75,000 tonnes up to 100,000 tonnes. In order to achieve this, the site boundary shall be extended to the southwest of the existing site, on which additional windrows will be located.

2.0 OVERVIEW OF PROPOSED OPERATIONS

2.1 Current Operations

BACS currently operates an open windrow composting facility comprising the treatment of biodegradable green wastes. Under their current environmental permit, BACS are permitted to treat more than 75 tonnes of waste per day but no more than 75,000 tonnes per year.

Green waste that is accepted onto site is shredded before being formed into windrows that are 50m x 5m x 3m (length x width x height). The material is sanitised in the windrows for a minimum of 7 days at 60 °C. Following sanitisation, the material is stabilised for a minimum of 7 weeks. During this period the windrows are turned a minimum of twice. Once the stabilisation phase is complete, the compost is screened before being stored in the product storage area to the north of the site ready for dispatch to the end markets. The total composting process is 8 weeks, with a minimum of three turns.

The site has recently applied to vary their existing Standard Rules Installation permit (SR2021 No1) to a Bespoke Installation permit to allow for the acceptance onto site and subsequent physical treatment of inert soils under the following activity:

- Physical treatment for recovery of non-hazardous waste: conditioning and screening of imported soil wastes.

The inert soils are processed within the existing site boundary. Following acceptance of the waste onto site, the inert soil waste material is tipped onto a designed reception area which is located next to the 0-10mm compost on site to await screening. Once the inert soil material has been tipped, it undergoes an initial screening using the Edge TRT 620 (2021) trommel screen.

Once screened, the inert soil waste is conditioned and blended with 0-10mm compost (produced through the OWC system). The 0-10mm compost is stored in the western corner of the site and a batch of 0-10mm compost is moved up when it is 8 weeks old next to the 10mm screener (Edge TRT 620 Trommel Screen). Some of this 0-10mm compost is then blended with the screened inert soil material to form the final topsoil product (BS 3882 certified). Once it has been screened, conditioned and blended with the 0-10mm compost, it is stockpiled in

the finished compost area. The amount of inert soil processed at Birch Airfield is a maximum of 10,000 tonnes per annum.

2.2 Proposed Operation

BACS are seeking consent to vary their bespoke environmental permit to increase the throughput of material at the site from 75,000 tonnes up to 100,000 tonnes.

To achieve this, BACS propose that the site boundary shall be extended to the southwest of the existing site, all along the southwestern boundary of the site. This shall enable additional space for up to 34 extra composting windrows and a new lagoon to contain the leachate generated on this extended area. The operational activities of the site shall not change as a result of the site extension.

2.3 Operational Layout

The proposed variation does alter the existing site boundary. The composting pad will be extended by approximately 65m to the southwest across the entire length of the southwest boundary of the site to accommodate additional windrows, a new lagoon and a perimeter soil bund surrounding the windrows and the access road. The new lagoon will have dimensions of 20m x 28m and will capture all leachate generated on the extended pad area. The windrows will be located on a new impermeable concrete pad and will run in a northeast to southwest orientation across the newly extended area. Each windrow will be up to 5m in width, 50m in length and 3m high, with an appropriate gap between each windrow.

The weighbridge for the site is located at the eastern entrance to the site. The northern portion of the pad is used for waste reception and shredding. The central and southern portions of the site are used for open windrow composting. The eastern portion of the site is used for final product compost storage. The central western portion of the site is used for the inert waste soil processing activity.

2.4 Wastes to be Processed

There are no proposed changes to the wastes to be processed on site. A full itemised list of wastes to be processed on site, including EWC codes is provided in Annex A. The list provided is an expansion of the wastes previously allowed to be accepted on to site and incorporates the EWC codes associated with the treatment of inert waste soils.

2.5 Calculated Capacity

BACS is currently permitted to treat up to 75,000 tonnes per year of a specified biodegradable green waste and are seeking permission to be able to accept and process up to 100,000 tonnes per year. This is supported by the findings in the site capacity assessment which found that the combined open windrows on the new and existing sites have a combined straight-line treatment capacity of 133,629 tonnes per annum.

2.6 Directly Associated Activities

The associated activities with the system are:

- Compost storage (prior to dispatch offsite);
- Leachate collection and storage; and,
- Storage of contaminants prior to recovery or disposal.

3.0 OPERATING PROCEDURES

3.1 OWC Sanitisation and Stabilisation

Each load of waste (inert or organic) shall enter the site via the main entrance and proceed to the weighbridge. The following information shall be recorded on either a Waste Transfer Note, or in the supplier's load record books kept in the weight ticket office:

- Waste Carrier;
- Waste Type;
- Waste Code;
- Client/Source of waste;
- Quantity (tonnes of waste);
- Date of delivery; and,
- Delivery location on site.

A site operative will inspect the waste transfer documentation. When the site operative is satisfied that the documentation is in order, the driver will be instructed to enter the weighbridge, where the weights will be documented.

The driver will then be instructed to proceed to the waste reception area, where a site operative shall ensure that the waste carrier takes the material to the input materials storage area. Here, the waste carrier will carefully tip the waste so as not to merge / contaminate it with any input materials already being stored.

A site operative will initially inspect the load to accept or reject if the load looks significantly contaminated (1% contamination). If there is evidence of Japanese Knotweed within the load, management will be notified immediately to take control of the matter and reject the load in its entirety, given that Japanese knotweed is an invasive species and non-conforming material under the PAS standard. If the load appears acceptable upon initial visual inspection, then the operative will spread and inspect each load at the storage area. Visible contamination (plastics, metals, stone etc) shall be removed where it is practical and safe to do so.

Following acceptance of the waste onto site, the driver will proceed back to the weighbridge to be weighed out and provided with a copy of the weighbridge ticket for their records.

Once tipped, the waste is pre-treated where appropriate (shredded/mixed/watered) prior to being formed into windrows on the lower pad ready for sanitisation. The dimensions of each batch in the windrows shall be 3m high, 5m wide and up to 50m long. Each batch will contain

up to 500 tonnes of material (depending on seasonal variation). Gaps of suitable width to enable turning / monitoring will be left between the windrows.

The composting process typically lasts 8 weeks with the sanitisation and stabilisation phases being actively managed and turned by a 360 excavator or loader. Monitoring equipment will be used for temperature monitoring and moisture levels will be assessed by grip test to ensure critical limits for composting are being met. The Compost Manager System is the primary piece of equipment used to measure temperature and oxygen levels.

At the end of the 8-week composting process, the compost will be screened and sampled. On achieving all of the criteria for the PAS 100, the compost will be moved to the product sales bay prior to dispatch.

3.2 3.1.1 Treatment of inert soil waste

The treatment of inert soil waste at BACS will follow the same pre-acceptance and waste acceptance process to the organic waste, as described above.

A separate spreadsheet shall be used to record the inert soil received and sold for traceability purposes. A site operative will inspect the waste transfer documentation. When the site operative is satisfied that the documentation is in order the driver will be instructed to enter the weighbridge, where the weights will be documented.

The driver will then be instructed to proceed to the waste reception area. The waste reception area for the inert soil waste materials is situated in the western corner of the site, next to the 0-10mm compost storage area. Once the inert soil waste has been tipped, a site operative shall undertake a visual inspection of the material to ensure that it conforms to an EWC code listed in Annex A and the description provided in the documentation supplied by the producer and holder. Any waste load not conforming to the above will be rejected from site.

The inert soil will then undergo an initial screening prior to being blended with some of the 0-10mm compost. The 0-10mm compost is stored in the western corner of the site (as shown on Site Layout Plan) and a batch of 0-10mm compost is moved up when it is 8 weeks old next to the 10mm screener (Edge TRT 620 Trommel Screen). Some of this 0-10mm compost is then blended with the screened inert soil material to form the final top soil product (BS 3882 certified).

At the end of the blending process, the topsoil product will be screened and sampled. On achieving all of the criteria for the BS3882, the soil will be moved to the product sales bay prior to dispatch.

3.3 Site Operational Hours

As specified by Planning Permissions, the site is open 7 days a week, 362 days per year. The facility is only closed on Christmas Day, Boxing Day and New Year's Day. The facility's operational hours for the facility will be typically as identified below:

Weekday	Waste Acceptance	Waste Treatment	Maintenance
Monday to Friday	07:00 - 18:30	07:00 - 18:30	As required
Saturday	07:00 – 17:00	07:00 – 13:00	As required
Sunday	09:00- 16:00	NIL	As required
Bank Holidays	09:00- 16:00	NIL	As required

3.4 Technical Standards and Control Measures

BACS operate to industry best standards, adopting procedures from PAS100 and BS Standards for the composting of waste. The critical control points governing these technical standards are to be applied to this site and fully incorporated into the site's Standard Operating Procedures.

A documented list of technical standards that the site will be operating to is provided in Annex B.

4.0 ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

All facilities have an impact on the environment around them. An Environmental Risk Assessment has been undertaken to include all operations on site (document reference BAC - Environmental Risk Assessment). BACS will be employing process management and monitoring techniques which will mitigate the environmental impact within the sections listed below:

4.1 Odour

The site has a comprehensive Odour Management Plan (document reference BAC - Odour Management Plan). There are no sensitive receptors within 250m of this facility and as such odour is not considered an issue.

4.2 Bioaerosols

There are no sensitive receptors (SR) within 250m of the composting activity. The Environment Agency (EA) requires that bioaerosols monitoring take place at composting sites if there is a SR within 250m of the site boundary. Therefore, BACS are not required by the EA to undertake bioaerosols monitoring.

4.3 Noise

The site has in place a full Noise and Vibration Management Plan (BAC-Noise_&_Vib_Man_Plan). There are no sensitive receptors within 250m of this facility. Given the proximity of the site to the nearest property (>500m away) and the mitigation measures that the site has in place (as described in section the Noise and Vibration Management Plan), it is considered unlikely that noise and vibration from BACS waste treatment activities will cause nuisance or distress to neighbours of the site.

4.4 Surface Water

Surface water on site is managed by the site's drainage system. All water that is generated on site is brushed with a teleporter and brush attached into the site drainage system. This subsequently drains into the site lagoon. Leachate generated in the composting process is conferred to land for agricultural benefit or recirculated into the compost where necessary to amend moisture content of the material.

There are no environmentally sensitive surface waters within 250m of the site boundary.

4.5 Sensitive Receptors

There are no sensitive receptors within 250m of the site boundary

5.0 ANNEX A – ACCEPTABLE EWC CODES

EWC Codes for the Treatment of waste for open windrow composting and for the Physical treatment for recovery of Non-Hazardous Waste: conditioning and screening of imported soil wastes.

Waste Code	Description
02 01	**Waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing.**
02 01 03	Plant-tissue waste.
02 01 06	Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site.
02 01 07	Wastes from forestry.
02 01 99	Waste not otherwise specified.
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation.**
02 03 04	Biodegradable materials unsuitable for consumption or processing.
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa).**
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials.
02 07 02	Wastes from spirits distillation.
02 07 04	Materials unsuitable for consumption or processing.
03 01	**Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard.**
03 01 01	Waste bark and cork.
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer.
03 03	**Wastes from pulp, paper, and cardboard production and processing.**
03 03 01	Waste bark and wood.
03 03 10	Fibre rejects.
15 01	**Packaging (including separately collected municipal packaging waste).**
15 01 01	Paper and cardboard packaging.
15 01 02	Plastic packaging – compostable plastics only certified to EN 13432 or equivalent certified compostable standard
15 01 03	Wooden packaging.
15 01 05	Composite packaging.
15 01 09	Textile packaging.

15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials or cloths from the production of alcoholic and non-alcoholic beverages other than those mentioned in 15 02 02
16 03	**Off-specification batches and unused product**
16 03 06	Organic wastes other than those mentioned in 16 03 05 – untreated wool fleece only
16 10	**Aqueous liquid waste destined for off-site treatment**
16 10 02	Untreated wash waters from cleaning fruit and vegetables on farm only
17 05	**Soil (including excavated soil from contaminated sites), stones and dredging spoil.**
17 05 04	Soils and Stones other than those mentioned in 17 05 03
17 05 06	Dewatered dredging spoil and plant tissue waste from inland waters.
19 02	**Wastes from physical/chemical treatments of waste (including dechroimation, decyanidation, neutralisation)**
19 02 03	premixed wastes composed only of non-hazardous wastes (waste types listed within these standard rules only)
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 05	**Wastes from the aerobic treatment of solid wastes.**
19 05 01	Non-composted fraction of municipal and similar wastes from a composting process that accepts the waste types listed in SR2021 No.1 and made up of previously sanitised batches only.
19 05 03	Off-specification compost.
19 06	**Wastes from the anaerobic treatment of waste**
19 06 04	Digestate from anaerobic treatment of municipal waste, separated fibre from a process that accepts waste types listed in SR2021 No.1 or AD standard rules only, made up of previously pasteurised and stabilised batches only and in compliance with APHA authorisation.
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste, separated fibre from a process that accepts waste types listed in SR2021 No.1 or AD standard rules only, made up of previously pasteurised and stabilised batches only and in compliance with APHA authorisation.
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste (previously digestate sewage sludge only).
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified.**
19 12 01	Paper and cardboard.

19 12 12	other wastes (including mixtures and materials) from mechanical treatment of wastes others than those mentioned in 19 12 11
20 01	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions.**
20 01 01	Paper and cardboard.
20 01 39	Plastics.
20 02	**Garden and park waste (including cemetery waste).**
20 02 01	Biodegradable waste.
20 02 02	Soil and stones (garden and park waste)
20 03	**Other municipal wastes.**
20 03 01	Municipal household waste – separately collected garden waste only
20 03 02	Waste from markets.

6.0 ANNEX B – TECHNICAL STANDARDS SUMMARY

WRM Ltd are acting consultants for Birch Airfield Composting Services Ltd who have commissioned WRM to produce a list of Technical Standards that the site will be working to during the operational lifetime of the permit.

BACS is proposing to accept a number of non-hazardous wastes to process through the onsite waste treatment system as outlined within this document. The table below presents a list of technical documents, with reference, for the process of composting green wastes and the on-site treatment of inert waste soil. These documents have been utilised to fulfil the requirements of the permit variation application and will continue to be in use as a point of reference during the operational lift of the permitted site. Documents have been sourced from both regulatory agencies and industry led organisations such as the Organics Recycling Group (ORG).

Composting and Wood Recycling - Technical Standards	
Technical Guidance Note	**Document Reference**
How to comply with your environmental permit	EA Guidance
The composting industry code of practice	REAL
Industry guide for prevention and control of odours at biowaste processing facilities	REAL
PAS 100 Standard Operating Procedure	BSi
Quality Protocol for Compost	WRAP/EA
Specification for topsoil	British Standard 3882:2015
H1 EA overview of Environmental Risk Assessments for Permits	EA Pollution Prevention Guidance
H1 Annex A – Amenity and accident risks from installations and waste operations	EA Pollution Prevention Guidance
H4 Odour Management Guidance	EA Pollution Prevention Guidance
Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste	EA SGN IPPC S5.06 (Produced for England and Wales)