



REPORT

Biffa Waste Services Ltd

Eye Landfill, Eastern Extension

Dust Management Plan

Submitted to:

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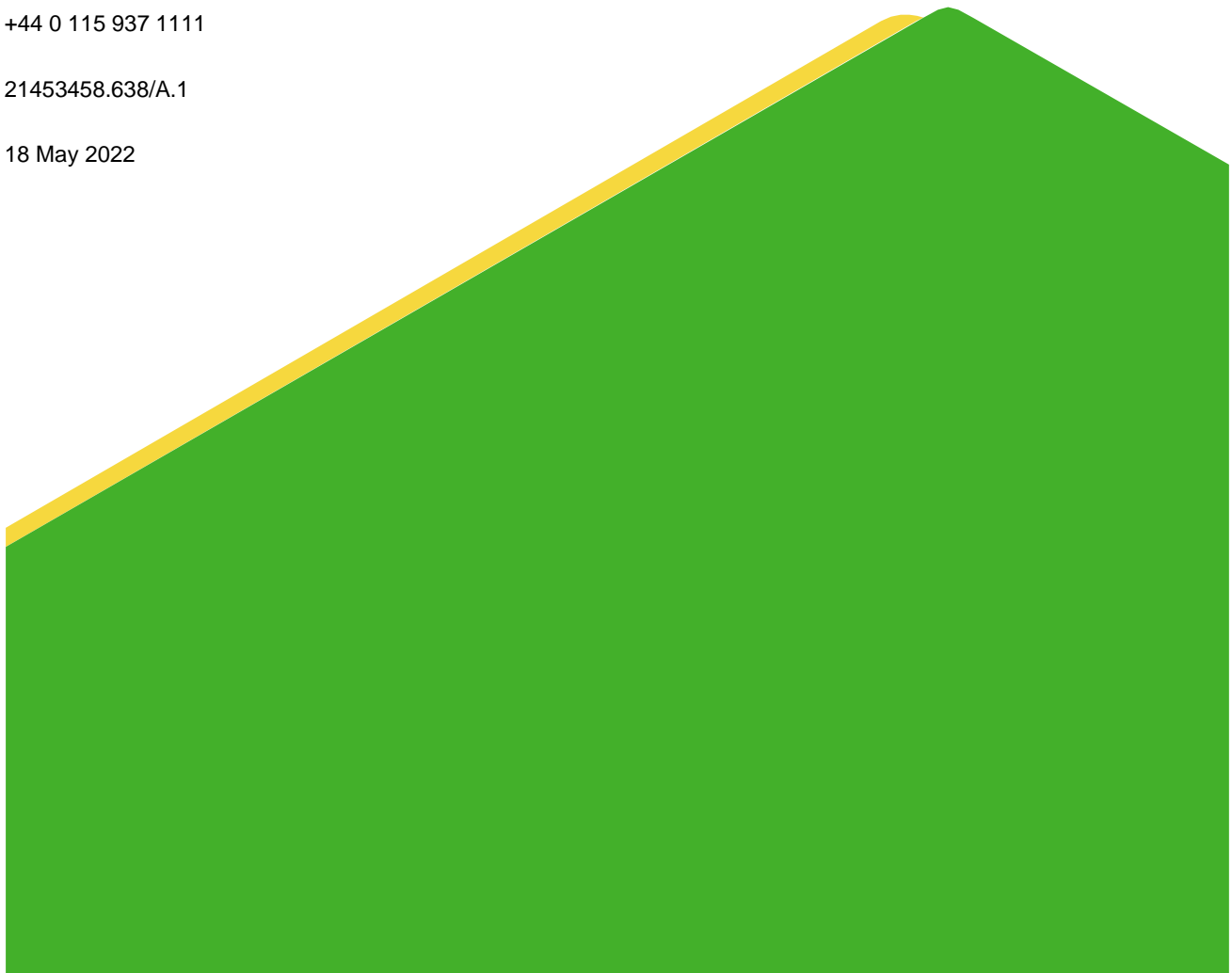
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1.0 INTRODUCTION

1.1 General

This Dust Management Plan (DMP) has been prepared by Golder, member of WSP in UK (Golder), on behalf of Biffa Waste Services Ltd (Biffa). This DMP outlines the approach to the management and minimisation of potential dust emissions and assesses dust levels, sources and pathways during operational activities comprising the excavation and movement of top soil, subsoil, bulk/engineered clay fill, and inert waste materials at the site.

The DMP serves as a consistent point of reference for environmental considerations throughout the operational period for Biffa. Potential dust impacts from the landfilling of non-hazardous waste are also managed in accordance with the Environmental Permit and this DMP should be implemented in conjunction with the Nuisance and Health Management Plan. The other potential dust sources were assessed as of low significance.

This DMP is a 'live' document, which shall be updated accordingly as the project is progressed. Consequently, the DMP should be reviewed after 12 months operation at the site and revised as required. The requirements of this DMP may be transferred to a site-specific dust management plan developed in accordance with Biffa's Environmental Management System.

1.2 Site Setting

The Eastern Extension is approximately 1.1 km southeast of the village of Eye and 2.3 km east of Peterborough. It is in a predominantly rural area, surrounded by agricultural fields, other mineral extraction workings, and isolated dwellings. The A47 road is 1,150 m to the north, Eyebury Road is 1,400 m to the west, Oxney Road is 400 m to the southwest (of the Site Reception) and Willow Hall Lane passes down the eastern boundary.

Key residential receptors (measured from the planning application boundary) are located as follows:

- America Farm Cottage – 400 m to S;
- America Farm Commercial Estate – 400 m to SSW;
- Owls Nest and Walnut Cottage – 650 m to SW;
- Willow Holt – 40 m to E;
- Brigg's Farm Cottage – 40 m to SE;
- Willow Hall – 90 m to the E;
- Willow Hall Farm Cottage – 95 m to E;
- Bar Pasture Farm – 95 m to NE
- Tanholt Farm – 240 m to N;
- Tanholt Cottage – 310 m to NNW;
- Eyebury Cottages and new residential property – 550 m to NW;
- Eyebury Farm – 630 m to WNW; and
- Oxney Grange - 270 m to WSW.

Pode Hole Quarry is a sand and gravel quarry (operated by Aggregate Industries) to the north which is (at its closest point) adjacent to the Site but also extends northeast to the A47 road. Different parts of the quarry are connected via an internal road that extends under Willow Hall Lane.

Pasture House Farm Quarry is another sand and gravel quarry (operated by Land Logical Group) about 1,000 m to the northeast adjacent to the A47 road and accessed from Willow Hall Lane.

The Cat's Water Drain flows north to south and forms the boundary between Eye Landfill and Willow Hall Farm Quarry and Inert Landfill. It is a natural watercourse which has been canalised adjacent and downstream of the sites. There is an agricultural reservoir and other surface water features 500 m to the southeast.

Key statutory receptors are as follows:

- Eye Gravel Pit (SSSI) – 2,130 m to N;
- Eye Green (LNR) – 1,710 m to N;
- Dogsthorpe Star Pit (SSSI) – 1,980 m to NW;
- Dogsthorpe Star Pit (LNR) – 1,980 m to NW;
- Nene Washes (SPA) – 2,600 m to S and SE;
- Nene Washes (Ramsar) - 2,600 m to S and SE; and
- Nene Washes (SAC) – 3,200 m to SSE.

The nearest non-statutory designated nature conservation sites including the following:

- Eye Green Local Nature Reserve (LNR) - 1,710 m to the N;
- Dogsthorpe Star Pit LNR - 1,980 m to the NW; and
- Eyebury Road Pits County Wildlife Site (CWS) – which is located within Eye Landfill and linked to Biffa's ongoing restoration and ecological management including the Wildlife Corridor, Clear Water Lagoon and silt lagoons.

Cultural heritage features within 1.0 km of the site boundary include:

- Scheduled Monument, Iron Age and Roman settlement at Bar Pastures – 0 m to North;
- Scheduled Monument, Bowl barrow 780 m east of Bar Pasture Farm – 780 m to East;
- Scheduled Monument, Two bowl barrows 940 m south east of Bar Pasture Farm – 1,000 m to East;
- 2 Nr Grade II* Listed buildings at Oxney House – 500 m to SW;
- 4 Nr Grade II Listed buildings at Eyebury Farm – 610 m to WNW;
- 1 Nr Grade II Listed building 69 Eyebury Road – 840 m to NW;
- Grade II Listed building at Willow Hall – 90 m to East; and
- Grade II Listed building at Prior's Farmhouse – 95 m to SE.

Bar Pastures Scheduled Ancient Monument (SAM) is located immediately north of Willow Hall Farm Quarry around Bar Pastures Farm. It is part of a settlement of Iron Age and Roman date, with a drove and associated ditches, rectilinear yards and other enclosures, some of which contain the remains of buildings. It is located on a gravel terrace about 1 km west of what was, formerly, the edge of the peat fen. Archaeological features are visible as low earthworks and as buried features within the underlying gravel below the depth of ploughing.

A second SAM comprises two bowl barrows, approximately 800 m east of the site situated on gravel islands along the prehistoric fen edge. These comprise earth mounds with encircling ditches associated with burials. The ditches have been infilled and the deeper remains are protected by Fen deposits.

Bridleway/Footpath Eye 3 runs in an east to west direction across Eye Landfill and across the Application Site. It forms part of the Peterborough Green Wheel - a recreational route around the city with 'spokes' out from the centre.

1.3 Site Operations

Biffa would like to extend its existing landfill operations at Eye Landfill by developing parts of Willow Hall Farm Quarry and Inert Landfill as a non-hazardous landfill (to be called the Eastern Extension) for continuous and uninterrupted landfilling operations after the current Southern Extension at Eye Landfill is completed.

Willow Hall Farm Quarry and Inert Landfill is located immediately to the east of Eye Landfill and is operated by PJ Thory Ltd (Thory). It is an active sand and gravel quarry which is being restored to a low level, flat lying restoration through the progressive importation of inert waste.

Re-development as a non-hazardous waste landfill requires this application to provide a new scheme for the excavation and movement of underlying clay materials, excavation and relocation of inert waste already deposited, and changes to the approved phasing and restoration contours. The new scheme will reduce the overall landfill footprint, bring forward and enhance some areas of restoration including the Green Wheel path, and provide an extension to Biffa's existing Wildlife Corridor.

The proposed development is summarised as follows:

- Ongoing mineral extraction operations at Willow Hall Farm Quarry will continue and be completed by Thory to existing timescales; however, the ongoing restoration by the placement of inert waste would cease subject to approval of Biffa's planning and Environmental Permit variation applications.
- With permissions in place, Biffa proposes to commence preparation works in 2022 and landfilling in April 2023. Preparation works will include the new Site Reception and haul road. It will also include backfilling the southeast corner of Willow Hall Farm Quarry closest to residential properties with clay and completing restoration in advance of landfilling.
- Landfilling would commence in the southwestern corner and move anticlockwise and then progressively northwards. The site would receive some 3.23 Mm³ of waste (pre-settlement, pre-restoration) over the period from 2023 to 2038 followed by completion of restoration.
- Inert waste already placed by Thory at the north end of its Inert Landfill would be excavated by Biffa and re-deposited in a dedicated inert landfill area between the transmission line and the Cat's Water Drain. Inert waste would be placed to a low-level and restored to just below surrounding ground level to provide an extension to Biffa's existing Wildlife Corridor.
- Areas to the south of the Green Wheel path would not be filled with waste. Instead, Biffa would excavate Oxford Clay from the base of the quarry and place it, together with sub-soil and top soil, to a low level restoration and return it to agriculture as soon as possible after completion of mineral extraction operations by Thory.

2.0 LEGAL COMPLIANCE

This DMP is based on measures to ensure legal compliance and to establish good management practice and includes compliance with the following:

- Air Quality Standards Regulations 2010 (as amended); and
- Environmental Protection Act 1990.

Biffa will comply with the DMP in order to meet relevant air quality legislation and best practice with regard to loss of amenity and nuisance due to the impact of dust emissions. In the UK, there is no official Air Quality Standard (AQS) level for the total dust deposition rate that would be considered to create a nuisance. An 'unofficial' nuisance dust deposition rate widely accepted is an annual mean of 200 mg/m²/day for the total dust deposited.

3.0 RECORD KEEPING

The Site Manager or nominated deputy will be responsible for dust management and for maintaining a register of monitoring which will be made available for auditing and inspection.

An up-to-date copy of the DMP will be maintained at the Site Reception office.

Records of formal visual site inspections (undertaken daily, and more frequently during periods of high winds, by the Site Manager or nominated deputy) and any complaints will be maintained. The following points will be noted with regards to visual inspections and response to complaints:

- Any elevated dust levels, meteorological conditions and any actions undertaken;
- Any increase in the frequency of site inspections and dust issues on-site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- Any exceptional incidents that cause dust emissions, either on-or off-site, and the action taken to resolve the situation; and
- Full details of any dust complaints including complainant name, location and contact details, identification of cause(s), and any appropriate measures taken to reduce emissions in a timely manner.

4.0 AUDITING AND REVIEW

Audits of the DMP will be undertaken by Biffa. The audit will check that all necessary documentation is held. Visual monitoring and complaints records will be audited to ensure that full records are kept, and all necessary information is recorded. An audit schedule will be arranged but will include an annual audit, as a minimum requirement.

To ensure the DMP remains 'fit for purpose' for the duration of the project, it will be regularly reviewed and updated to facilitate efficient and effective delivery of the project legal and environmental commitments. A log will be kept including a summary of the update and a record of the review.

Reviews of the DMP will be undertaken and recorded by Biffa with the findings of the reviews reported to the Site Manager and other staff members as required.

The requirements of this DMP may be transferred to a site-specific dust management plan developed in accordance with Biffa's Environmental Management System.

5.0 POTENTIAL FOR EMISSIONS

Dust and emissions arising from excavation, soil movement and restoration activities can cause health risks to receptors and nuisance and annoyance to local residents and businesses. The level of dust emitted will be dependent on the activity undertaken, the location of the activity on Site, and the nature of the dust. The generation and dispersion of the dust will be influenced by other meteorological factors such as wind speed and direction and/or, periods of dry weather. Traffic movements have potential to generate dust emissions as vehicles move within the site.

In general terms, adverse dust impacts from sand and gravel quarry-type activities are uncommon beyond 250 m (and beyond 400 m from hard rock quarries) measured from the nearest dust generating activities. It is commonly accepted that the greatest impacts will be within 100 m of a source, and this can include both large (>30 µm) and small dust particles¹. From the nature of the proposed operations, adverse impacts due to nuisance dust are therefore most likely to be experienced within this distance.

The principal potential sources of airborne dust associated with the proposed development include:

- Soils (top soil and subsoil) stripping, stockpiling and replacement;
- Excavation of inert waste;
- Loading and tipping;
- Inert fill and engineered fill operations;
- Bulk filling (with clay materials) of areas to the south of the Green Wheel path;
- Landscaping works with the extension to the Wildlife Corridor;
- Haulage of material around the site; and
- Wind blow across stripped areas, stockpiles and other loose bare surfaces.

Potential dust impacts from the landfilling of non-hazardous waste are managed in accordance with a Nuisance and Health Management Plan regulated by the Environment Agency in accordance with the Environmental Permit. The other potential dust sources were assessed as of low significance.

6.0 MITIGATION MEASURES

6.1 General

Excavation, soil movement and restoration activities are transient operations where a number of processes take place over relatively large areas but for relatively short periods. Dust emissions can occur at a number of stages, but these can be significantly controlled by best practice such as:

- Appropriate design and phasing of the works including layout and working procedures;
- Using and properly maintaining carefully selected equipment;
- Understanding the potential for dust emissions to occur;
- Training and supervising site staff in dust control; and
- Applying appropriate mitigation measures.

¹ Institute of Air Quality Management (2016). Guidance on the Assessment of Mineral Dust Impacts for Planning (v1.1)

A range of dust control and mitigation measures are set out. These include dust containment, where dust emissions are minimised through use of appropriate equipment and systems; dust suppression, where dust emissions are controlled by the use of water sprays etc. and dust management, where the potential for dust emissions to occur are reduced through effective control of site operations.

Standard good practices as detailed in PGN 3/08(12)² are relevant to the proposed development. The essence of the guidance is the control of emissions through good site management. The points below identify mandatory mitigation measures and recommended best practice:

6.2 Weather

As an over-riding requirement, if during dry windy weather any operations are identified as causing or likely to cause visible emissions across the site boundaries, or if abnormal emissions are observed within the site, the Site Manager or nominated deputy will immediately modify, reduce or suspend those operations until either effective remedial actions can be taken or the weather conditions giving rise to the emissions have moderated.

6.3 Soils Stripping, Removal from Stockpiles/Bunds and Reinstatement

Soils handling is generally a short-lived seasonal activity and there usually is flexibility as to its timing.

Topsoil may give rise to airborne dust during stripping, removal from stockpiles/bunds and reinstatement operations, particularly as they are likely to be handled in a dry friable condition.

Subsoils/overburden tend to be damper and more cohesive than the top soils and are less likely to be a significant source of dust. The significance of the potential impacts will be reduced by the short duration of soils handling in any one season.

Unacceptable dust emissions can be controlled by minimising working of soil in very dry, windy conditions, by reducing drop heights at material transfer points and controlling vehicle speeds.

Soils handling shall be suspended when the wind conditions would be likely to result in visible dust being carried towards off-site receptors. Soil storage mounds shall be seeded as soon as practicable for stabilisation and to reduce the risk of wind-blow from exposed surfaces.

6.4 Inert Waste Excavation

Inert waste, already deposited by Thory at the north end of the Site, will be extracted 'as-dug' and a dry working method will be employed to maintain the quarry in a dry condition. There will be a requirement for excavation dewatering and discharge of water from the quarry.

Additional control measures (such as wetting down with water sprays or trailed bowser, or cessation of activities in unsuitable weather conditions) will be employed if there is a risk of visible dust from the extraction faces being blown over the site boundary towards off-site receptors.

6.5 Loading and Tipping

Loading and tipping operations within the working area are unlikely to result in visible dust emissions. However, drop heights shall be controlled during all loading and tipping operations, particularly of soils near sensitive boundaries to minimise the entrainment of dust into the atmosphere.

² Process Guidance Note (PGN) 3/08 (12) *Statutory guidance for quarry processes* (Defra, 2012)

6.6 Inert Fill Operations

The proposed inert fill operations (Cells 19 and 20) will deal principally with cohesive materials; consequently, the filling operations are unlikely to result in any significant dust emissions.

6.7 Site Haulage

Haulage of soil materials across the Site is typically considered the greatest source dust. The impact is increased over longer distances when speeds tend to be greater, and more effort is required to maintain a smooth damp running surface.

On site vehicle movements will be used to transport material between areas of excavation and restoration which has the potential to generate dust and some of which will take place adjacent to the site boundaries. Where practicable, all site traffic will keep to designated haul routes to reduce the creation and subsequent entrainment of fine material into the atmosphere.

Standard good practices for site haulage include:

- Avoiding abrupt changes in horizontal and vertical alignment;
- Regular clearing, grading and maintenance of haul routes;
- Keeping to the designated site speed limit;
- Ensuring that heavy plant is fitted with upswept exhausts and radiator fan shields;
- Evenly loading vehicles to avoid spillages; and
- Regular application of water, whether by bowser or by fixed sprays, in dry conditions.

Haul routes across the surface of the site shall be located where possible in positions which are remote from sensitive site boundaries.

6.8 Road Transport

Vehicular access to Eye Landfill is via the existing 700 m long entrance road from Eyebury Road to the Site Reception. The entrance road connects to Eyebury Road with a T-junction arrangement. The entrance road is surfaced in concrete with signage and traffic calming measures.

Nearly all vehicles arriving at the Site will carry non-hazardous waste managed in accordance with a Nuisance and Health Management Plan regulated by the Environmental Permit.

6.9 Wind Blow across Bare Ground and Stockpiles

During dry conditions, wind-blown dust emissions are potentially significant and might be carried for a considerable distance when strong winds blow across large open areas of loose or bare ground. During soil stripping, wind-blown dust might be raised from the freshly exposed surface.

Strong winds may blow directly at the inert waste extraction face as prevailing winds blow from the southwest but, due to its inherent dampness, dust is only likely to be raised during prolonged dry weather and is unlikely to be in significant quantities.

The effects of wind blow across stripped surfaces, unpaved vehicle circulation areas, stockpiles and areas of bare ground will be managed by ensuring that:

- The extent of such areas is kept to a minimum;
- Loose materials are removed or treated, and
- Such areas are wetted down as necessary.

During dry conditions, unpaved circulation areas and the surfaces of stockpiles in the open will be watered using fixed sprays or a water bowser.

6.10 Other Matters

General matters and the management of the site can affect the likelihood of significant dust emissions. These include:

- The use of clean water for dust suppression to avoid recirculating fine material;
- High standards of housekeeping to minimise track-out and wind-blown dust; and
- Effective staff training in respect of the causes and prevention of dust,

7.0 MAINTENANCE OF PLANT AND EQUIPMENT

Effective control of airborne dust emissions requires the maintenance and proper operation of all plant and equipment, including fixed and mobile dust extraction and suppression equipment. A programme of planned maintenance will be carried out on all plant and equipment in accordance with the manufacturers' recommendations to ensure that it operates at optimum efficiency.

Stocks of essential spares and consumable items will be held at the site or kept readily available for use at short notice.

Any malfunction or breakdown leading to abnormal emissions will be dealt with promptly and operations will be modified or suspended until normal working can be restored. All such malfunctions, and the actions taken, will be recorded in the site logbook.

8.0 SITE MANAGEMENT

The Site Manager shall exercise, either personally or by delegation to suitably trained and responsible staff, day-to-day control of the site. The Site Manager will be responsible for the satisfactory working of the whole site and for ensuring full compliance with the Dust Management Plan.

Staff at all levels shall receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions. Particular emphasis will be given to plant and equipment malfunctions and abnormal conditions.

The Site Manager shall ensure that customers and suppliers are aware of the need to comply with the provisions of this plan so far as they are relevant to their activities on site.

Any member of staff who fails to comply with the provisions of the dust management and monitoring plan shall be re-trained as necessary.

9.0 EMERGENCY RESPONSE

An emergency response procedure, to be followed in the event of a major dust emission, shall be kept at the site office. For the purposes of emergency response, major dust emissions will be defined as including:

- Visible dust crossing the site boundaries;
- Persistent fugitive dust from transport or plant movements; and/or
- Persistent wind-blown dust.

The contact details of key personnel will be listed in the procedure.

10.0 COMPLAINTS

All dust complaints shall be recorded and reported to the Site Manager or nominated deputy, who shall investigate the circumstances and ensure that the necessary corrective measures are taken. A prompt response will be made to the complainant and a record, including copies of all correspondence and telephone file notes, will be made in the complaints register.

The Environment Agency shall be notified of any dust complaint received by the Site or, conversely, the Environment Agency may notify Biffa of any dust complaint which it may receive. Biffa shall liaise with the Environment Agency in considering the findings of any subsequent investigation and any corrective measures which may have been taken.

In the event of any substantiated complaint, the effectiveness of the Dust Management Plan shall be reviewed.

Signature Page

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RB/SB/CM/ab

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