



Dust & Emission Management Plan (DEMP)

Liley Clough Environmental Ltd

Liley Lane, Grange Moore, Huddersfield,
West Yorkshire,
WF4 4EN

Prepared By:



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1. Introduction

The 1.4-hectare site is situated at Emley Fields, Liley Lane, Grange Moor, Huddersfield, West Yorkshire, WF4 4EN. The site is in the borough of Kirklees. Grid reference for the centre of the site is SE 21206 17030. The site is located within a wider area of agricultural land that extends to the north, west, south and east of the site and is predominantly used for grazing and grass production.

It is located on an area of derelict land of rough grassland, formerly the site of Whitley Clough Colliery which closed in 1947. A concrete pad in the centre of the site remains, with the two former mining shafts capped. On site currently is shale, concrete bases of former colliery buildings and partly completed bases which were used to create worm beds as part of a proposed wormery which commenced in 2005 but not completed. Parts of the site have extreme slopes relating to the previous use of the site as part of the wider colliery operation which currently makes the land unsuitable for modern farm machinery. The western edge of the site is marked by a bund formed with topsoil to the west of the site between Liley Lane and the site itself.

The purpose of the operation is to restore the land by deposit of waste for recovery, using 90,000 tonnes of imported subsoil and topsoil to regrade the steep slopes to allow for contours within keeping with the surrounding area. This will allow the existing farm to cultivate the land using modern agricultural machinery. Planning permission is in place for this activity.

The site is located in an Air Quality Management Area which is declared for NO_x (as NO₂) and PM₁₀. The environmental risk assessment has identified dust as a low risk to environmental receptors with management controls in place. Therefore a Dust Emissions Management Plan (DEMP) will accompany the bespoke permit application to ensure the minimisation of dust and particulate matter generation. The DEMP will identify the operations which have a potential impact upon air quality in the locality and detail the operational control measures which are implemented to minimise any impacts.

Once the bespoke permit for the deposit of recovery has been granted, this dust management plan will form part of the sites environmental management system.

1.1 Sensitive Receptors

Habitat screening and receptors have been identified and show receptors up to 2km from the site as seen in Figure 1 which may be effected from potential dust generation. Receptors are also summarised in tables 1 and 1.1.

Figure 2 shows the wind rose data for Huddersfield with the wind direction in the locality as predominantly a westerly wind (Metroblue, 0000). The wind rose is located from the nearest weather station to the site located at Huddersfield, 7 miles from the site location. The prevailing wind direction being westerly indicates the probability of exposure of dust to the schools, restaurant, the local wildlife site and deciduous woodland in the vicinity as low as these receptors are located to the north and south of the site. The vehicle movements and the tipping and spreading of subsoil and topsoil does have the potential to generate dust as identified in the environmental risk assessment although the risk has been identified as low with mitigating measures.

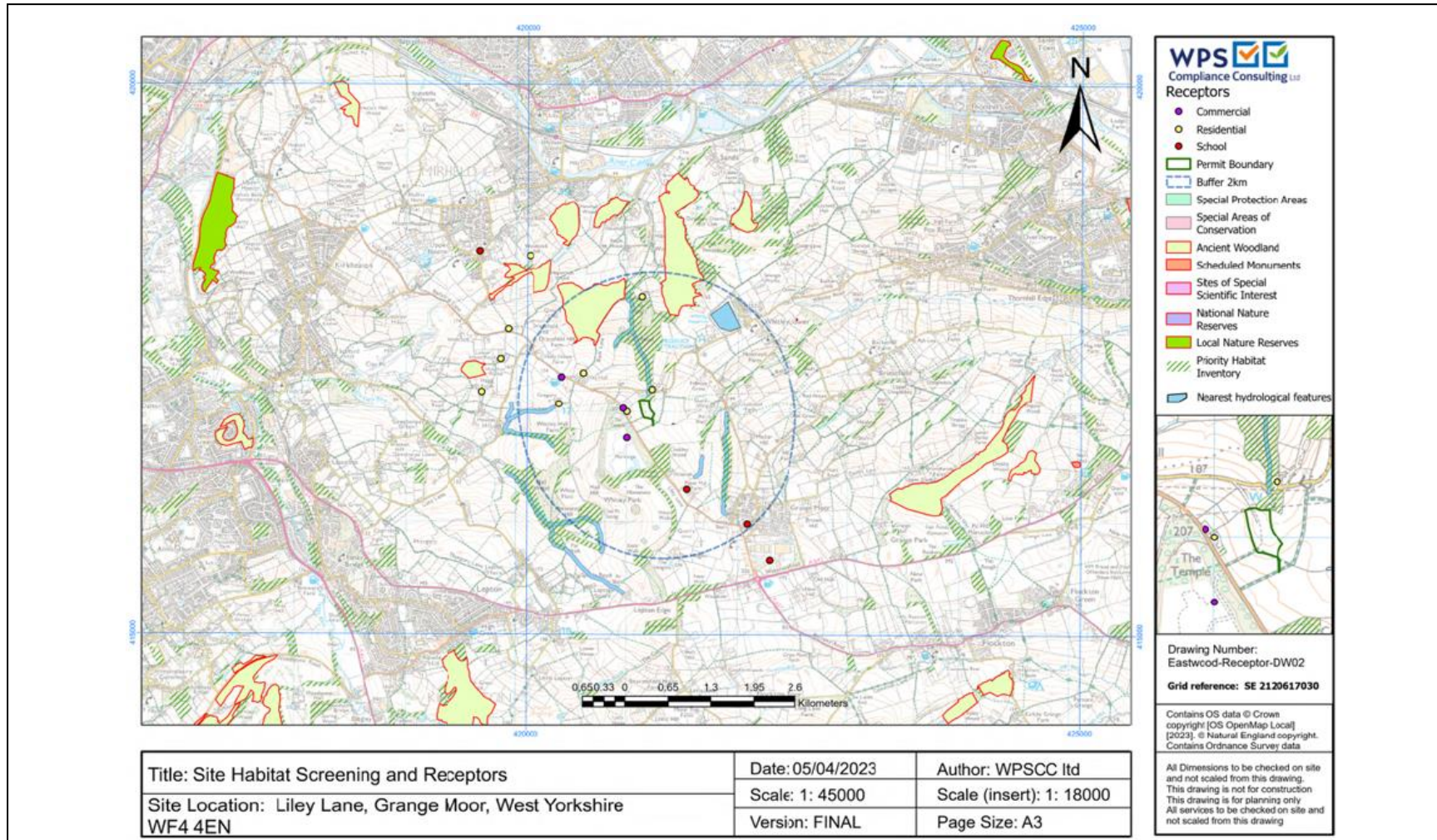


Figure 1: Nearby Sensitive Receptors

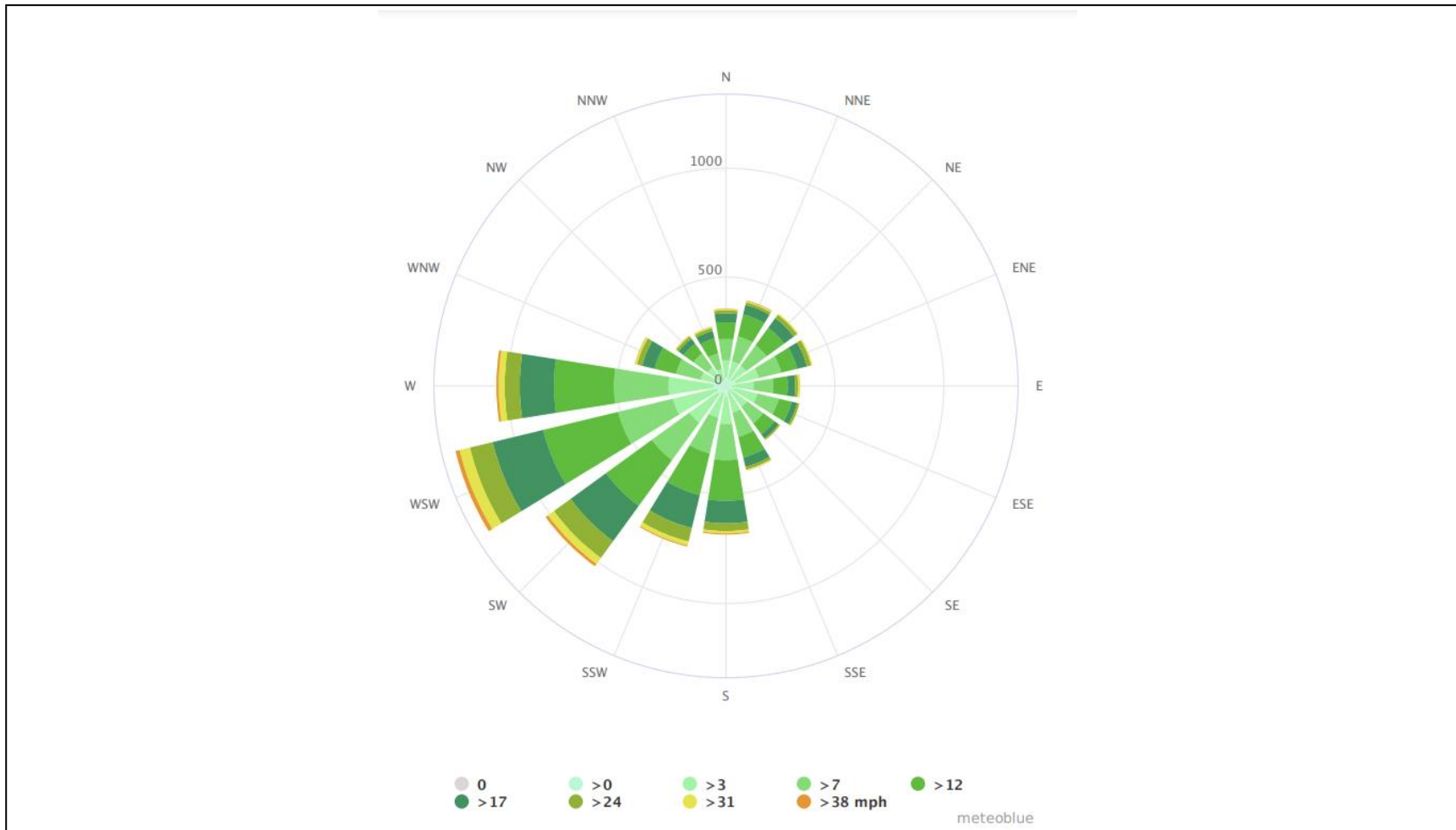


Figure 2: Wind rose showing the average wind direction and strength

Table 1 Distances to Selected, Representative Sensitive Locations

Boundary	Closest property	Approximate distance to Emley Fields site boundary (m)
West	Windy Bank Farm	100
North	Liley Clough Farm	130
North West	Residential area	570
North West	Residential area	740
South	Happy Hounds HQ	850
South	Grange Moor Primary School	1330
North	Deciduous Woodland	Up to 50
North	Liley Wood	200
North	Liley Clough (Small Watercourse)	180

Table 1.1 Sources of Dust and/or other Emissions

Company	Address	Type of Business	Distance from Emley Fields site boundary (m)
Mone Bros Temple Quarry	Liley Lane	Quarry	280

2. Operations at Emley Field

2.1 Waste Deliveries to Emley Field

The inert material will be delivered to site in 20 tonne tipper lorries which will all be either EURO5 or EURO6 compliant depending on the age of vehicle. In consideration of Liley Lane being classified as a 'B' road, vehicle movements will be carried out over a 2 year time period (dependent on weather and material availability).

The total amount of material to be spread over the 1.4-hectare site is 90,000 tonnes. The waste materials to be used as classified in the Waste Classification Technical Guidance WM3 (Environment Agency, 2021): 17 05 04 Soil and stones other than those mentioned in 17 05 03.

Waste acceptance procedures will ensure the subsoil and topsoil used on site meet the relevant description. Waste Transfer Notes are required for each delivery or batch of deliveries from the same source, and copies are retained for record purposes.

No more than the permitted amount of waste specified by the environmental permit will be exceeded and the volume required for the proposed operation has been estimated using before and after topography mapping.

The material is to be spread daily, using the onsite bulldozer in order to achieve the gradient agreed with planning. The proposed land recovery work is anticipated to take 2 years (dependent on weather and material availability) to complete and will be restored in accordance with the planning consent. The final levels will enable farming machinery to be safely used.

Once a load is delivered, a vehicle wheel washing system will be implemented to dislodge accumulated dust and mud prior to leaving the site. Table 2.1 lists the waste types for the proposed operation.

2.2 Overview of Waste Processing, Dust, and Other Emission Controls

Figure 2 shows the site and its boundary. Located south to the site, off Liley Lane, is a fence lined track owned by the farm which leads up to the site. Vehicles will access the site using this farm track. It will be this track where the wheel washing will be implemented. Due to the load being tipped as soon as it enters the site, there is no need for storage areas. However as a contingency there may be up to 100 tonnes of subsoil stored temporarily at any one time.

Table 2.1 Typical waste types brought to Emley Field

European Waste Code(EWC)	Product Description	Tonnes/week	Destination within facility					Process
			Screening Area	Tipping Area	Main Building	Storage Bay 1	Storage Bay 2	
			17 05 04	Soil and Stones other than those mentioned in 17 05 03	1,000 maximum	Yes	Yes	
Total		1000						

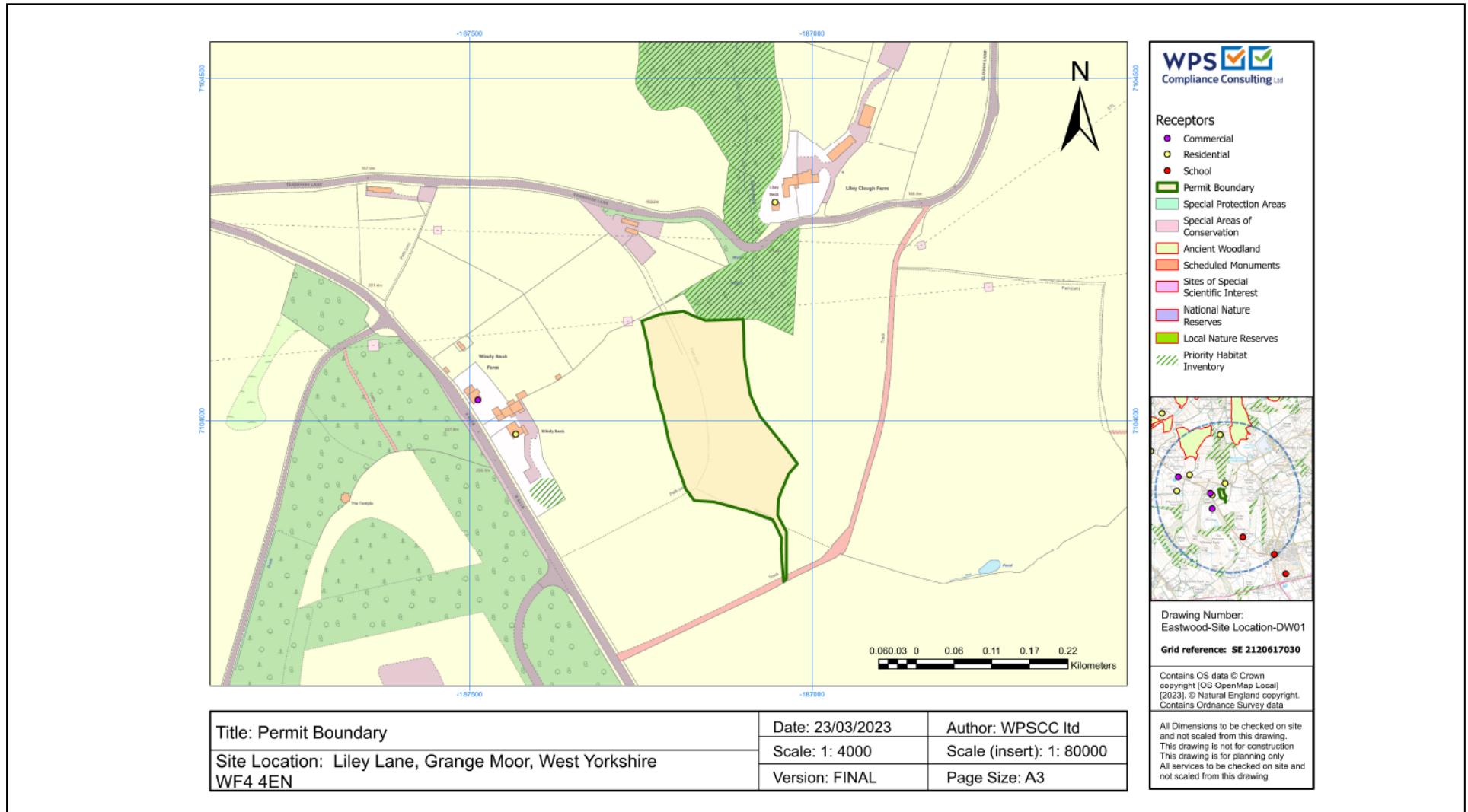


Figure 2: Site

Figure 3, taken from the environmental risk assessment identifies the receptor, source, pathway and the magnitude and management of dust risk.

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. Commercial premises- NW, Mone Bros Temple Quarry 280m SW, Restaurant 780m N. Residential- 142m NE, 183m W, 570m NW, 740m NW, Windy Bank Farm 180m Schools- Happy Hounds HQ 850m S, Grange Moor Primary 1330m S	Releases of particulate matter (dust) .	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	Medium	Permitted waste types are non hazardous soils and have a low potential to produce bioaerosols. The activities may produce dust from movement of vehicles and tipping operations especially in dry and also windy weather.	Prevailing wind direction for the area is predominantly west throughout the year so reduces the probability of exposure to schools and restaurant. Delay tipping of soil if very windy. Clean vehicle wheels at the end of the working day to reduce dust.	Low
Local human population. Commercial premises- NW, Mone Bros Temple Quarry 280m SW, Restaurant 780m N. Residential- 142m NE, 183m W, 570m NW, 740m NW, Windy Bank Farm 180m Schools- Happy Hounds HQ 850m S, Grange Moor Primary 1330m S	Releases of particulate matter (dust) .	Nuisance - dust on cars, clothing etc.	Air transport then deposition.	Medium	Low	Medium	As above. Local residents often sensitive to dust.	As above.	Low
Protected habitat- deciduous woodland north of site, up to 50m from site	Any	Harm to protected sites through contamination, smothering, disturbance etc.	Any	Medium	Medium	Medium	Waste operations may cause harm to and deterioration of protected habitats.	The ecological appraisal addresses any concerns and identifies the presence of protected species and notable habitats within 2km of the site. The waste to be accepted are non-hazardous soils and as such pose no significant risk to habitats. In addition operations will be carried out taking the sensitive nature of the deciduous woodland into account.	Low
Local Wildlife Site- Liley Wood 100m north of site	Any	Harm to protected sites through contamination, smothering, disturbance etc.	Any	Medium	Medium	Medium	Waste operations may cause harm to and deterioration of local wildlife site.	The ecological appraisal (Envirotech, 2018), did not identify any additional issues. It also addresses any concerns and identifies the presence of protected species and notable habitats within 2km of the site. The waste to be accepted are non-hazardous soils and as such pose no significant risk to habitats. In addition operations will be carried out taking the sensitive nature of the local wildlife site into account.	Low

Figure 3: Source-Pathway-Receptor Routes

3. Dust and Particulate (PM₁₀) Management

3.1 Responsibility for Implementation of the DEMP

The sites technically competent operator will ensure dust management measures are undertaken as appropriate to the site operations and current weather conditions. The technically competent operator must have a relevant WAMITAB certificate of competence plus an appropriate continuing competence (within date) which is renewed every 2 years.

The technically competent operator will be responsible for keeping records of monitoring and mitigation measures. All records will be retained for inspection as required. If further management measures are taken to control dust or weather condition monitoring, the additional mitigation measures will be recorded. In certain adverse weather conditions visual monitoring will be more intensive.

Additionally, the tipper lorry drivers will be made aware of the provision of the dust management plan and be required to comply with the relevant provisions as appropriate.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

The most likely activities to cause dust generation are:

- Vehicles entering and leaving the site with mud on wheels, and tracking dust on to or off the site
- Subsoil and topsoil falling off lorries which arrive uncovered
- Vehicles tipping the subsoil and topsoil
- Bulldozer spreading the subsoil and topsoil
- Particulate emissions from the exhaust of vehicles

To minimise dust generation, the dust control system will include the following measures:

- Wheel washing system to dislodge accumulated dust and mud prior to leaving the site
- Dampening down farm track for which a water supply will be maintained at all times when conditions require it
- Monitoring weather conditions. Any adverse weather conditions such as high winds- tipping will be delayed until wind speed drops

Table 3.1: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Mud	Tracking dust on wheels and vehicles, then mud dropping off wheels/vehicles when dry	In table 1 above	Visual soiling, also consequent resuspension as airborne particulates	Remove mud before vehicles leave site with wheel washing.
Debris	Falling off lorries	In table 1 above	Visual soiling, also consequent resuspension as airborne particulates	Ensure all vehicles entering and leaving the site are covered.
Tipping, storage and sorting of wastes in the open	Atmospheric dispersion	In table 1 above	Visual soiling and airborne particulates	Ensure low drop heights. Tipping will not be undertaken during extremely windy weather conditions.
Vehicle exhaust emissions	Atmospheric dispersion	In table 1 above	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength
Non road going machinery exhaust emissions	Atmospheric dispersion	In table 1 above	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength

Table 3.1 shows the connection between pathway, receptor and source. This will encourage the operator that use this DEMS to ensure that there are no gaps in abating the sources of dust emissions on site. This is not an exhaustive list of all abatement options, and there may be other technology and abatement options that exist to achieve the same or a greater outcome in reducing the risk of pollution.

3.3 Other considerations

In the event of severe weather conditions i.e. dry weather with high winds, the technically competent operator will decide whether to cease activities with the main emphasis of reducing any dust impacts. In the event of any unforeseen circumstances i.e. faulty equipment, lack of water supply, the technically competent operator will make an assessment of whether to cease activities with the main emphasis on site will be to reduce any dust impacts. Wheel washing will be available to minimise dust generation in all climatic conditions and used more frequently during dry weather conditions.

A permanent water supply is available on site in all climatic conditions to ensure the wheel washing facility can function effectively. The farm has three large rainwater tanks which will be used for wheel washing.

3.4 Visual Dust Monitoring

The technically competent operator will ensure that site operations are the subject of visual monitoring for emissions of particulate matter.

Visual monitoring by suitably trained site personnel is the most effective method of detecting as quickly as possible emissions of particulate matter throughout the working day thereby facilitating the prompt assessment of such emissions and the selection and implementation of control measures as necessary. The effectiveness of the measures for controlling emissions shall be assessed during inspections undertaken at the site following implementation of the control measures. Any problem that is observed will be reported to the operator who will be responsible for investigating the cause and implementing any remedial action as necessary. The results of inspections and remedial measures taken will be recorded.

No monitoring will take place outside operational hours but the technically competent manager will be available to attend site should a complaint be received. If complaints are received, additional dust monitoring will be implemented.

In the event of dust being detected beyond the site boundaries, the operation will cease.

3.5 Particulate Matter Monitoring

The management and monitoring of particulate matter will be undertaken by visual assessment. An action plan will be implemented on the basis that:

- i) there is an unacceptable visual emission of particulate matter from the site or
- ii) a complaint is received in relation to emissions to air

An unacceptable visual emission of particulate matter from the site comprises a visual observation of dust or particulate matter crossing the site boundary. The initial observation will be made by the site personnel who has identified the emission and will be verified by the technically competent manager. If an unacceptable visual emission is observed by on-site personnel, the action plan will be implemented immediately.

It is deemed that PM10 monitoring equipment is not required at this time. Should this situation change in the future then this plan would be updated and a copy sent to the Environment Agency for their consideration and incorporation into the site's permit.

4. Actions in the event of dust leaving site

1. The technically competent operator assesses the site activities and the nature of the waste handling and deliveries immediately prior to the alarm being raised, to work out what has caused the problem.
2. If the source cannot be ascertained with 100% confidence, the operator will suspend the likely dust/particulate generating activities.
3. If the source is within the site's control, the operator will take appropriate action in terms of dust/particulate abatement, to ensure that the situation is not repeated. This may take the form of the following;
 - a) Investigating the source of the dust/particulates to prevent a re-occurrence.
 - b) Using onsite stored rainwater to damp down road surfaces on site as appropriate
 - c) Suspending operations which are not being conducted using best-practice controls as set out in Table 3.1.
 - d) Log findings
 - e) Inform the Environment Agency of the breach and detail mitigating measures undertaken.
 - f) Liaise with local residents and appropriate stakeholders to ensure that they are fully aware of the situation and the steps being taken to rectify the situation.

5. Reporting and Complaints Response

In the event of any complaint, an investigation will be undertaken into the circumstances. Where the complaint resulted from activities within the site, steps will be taken where possible to reduce the impact of, or remove, the dust source. Any investigation will be concluded within two working days. The operator will maintain a daily record of complaints and investigations with any mitigation measures taken.

5.1 Reporting of Complaints

Complaints will be recorded on the dust complaint form detailed in Appendix A. Copies of all forms will be retained for inspection by interested parties upon request.

5.2 Management Responsibilities

The technically competent manager will be responsible for responding to and dealing with complaints.

6. Summary

The operations at the site may, at times, produce dust but the dust produced will be limited by the nature of the operations and the mitigating measures. In any event dust will be controlled to

confine and prevent its escape and to minimise airborne dispersal.

The main cause of dust generation will come from vehicle movements on and off site and the tipping and spreading of subsoil and topsoil.

Effective site management, to ensure the control of airborne dust, will include:

- Regular review of prevailing weather conditions and site operations
- Use of wheel washing system for vehicle movements entering and leaving the site and damping down onsite roads as required
- Covering of loads on vehicles entering the site
- Regular maintenance of all equipment

Ongoing monitoring of dust generation and with the appropriate updating of the DEMP, will ensure continuing effective dust management at Emley Fields without any adverse dust impacts off site

Appendices
Appendix A - Dust Complaint Form

Customer Details	
Customer Name -	
Address -	
Postcode -	
Customer Contact Details -	
Tel -	
Email -	
Date -	
Complaint Ref Number -	
Complaint Details -	
Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Weather conditions -	
Wind direction and speed -	
Investigation findings -	
Feedback given to Environment Agency and/or local authority -	
Date feedback given -	
Feedback given to public -	
Date feedback given -	
Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
If different insert reason for delay -	
Does the dust management plan need to be updated -	
Date that the dust management plan was updated -	
Closure	
Site manager review date	
Site manager signature to confirm no further action required	

7. References

Environment Agency (2022) *Control and monitor emissions for your environmental permit*. Available at: <https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#dust-mud-and-litter> (Accessed 18/04/2023)

Environment Agency (2021) *Guidance on the classification and assessment of waste (1st Edition v1.2.GB) Technical Guidance WM3*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1021051/Waste_classification_technical_guidance_WM3.pdf (Accessed 12/04/2023)

Metroblue (0000) *Simulated historical climate & weather data for Huddersfield*. Available at: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/huddersfield_united-kingdom_2646458 (Accessed 18/04/2023)