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DUST MANAGEMENT PLAN

SKELBROOKE QUARRY EXTENSION AREA
STRAIGHT LANE
SKELBROOKE
DONCASTER
SOUTH YORKSHIRE
DN6 8LY

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Information Sheet

ENVIRONMENTAL PERMIT VARIATION APPLICATION – DUST MANAGEMENT PLAN SKELBROOKE QUARRY EXTENSION AREA, STRAIGHT LANE, SKELBROOKE, DONCASTER

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1	August 2022	Updated the report in line with the latest EA DEMP Template and Guidance.	R Chapple	D Thomas
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SKELBROOKE QAURRY EXTENSION AREA
STRAIGHT LANE
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DONCASTER

ENVIRONMENTAL PERMIT VARIATION APPLICATION
DUST MANAGEMENT PLAN

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1.0 INTRODUCTION

1.1 Scope & Background

1.1.1 This Dust Management Plan (DMP) has been prepared by Sirius Environmental Limited (Sirius) on behalf of Darrington Quarries Limited (DQL) in support of their submission of an Environmental Permit Variation Application for the Environmental Permit: EPR/CP3994ZR to support a revised scheme of restoration for the Skelbrooke Quarry Extension Area, Skelbrooke, Doncaster. DQL are seeking to commence an alternative restoration scheme for the extension area (primarily in response to safety concerns) which will bring the ground levels within the flooded area to above that of current water levels within the void. This will also aid in surface water management for the wider restored quarry and landfill.

1.1.2 This DMP considers the potential for the generation of fugitive dust emissions from the general operations, which include the handling and deposition of imported material to support the restoration of the Skelbrooke Quarry Extension Area via a waste recovery operation. A full list of the EWC waste codes for the proposed infill materials to be accepted for deposition of waste is included in **Appendix DMP1**. This DMP outlines the site conditions, operational processes and controls to be applied and the monitoring to be undertaken to avoid potential nuisance and environmental harm from occurring.

1.1.3 This DMP has been prepared with cognisance to the materials being processed and therefore considers the appropriate techniques for the operations being undertaken.

1.2 Site Location and Layout Description

1.2.1 The Skelbrooke Quarry Extension Area is located to the south of the village of Skelbrooke and approximately 500m to the Northwest of the village of Skellow, South Yorkshire. The site is approximately 1km to the west of the A1 Great North Road, and 7.5km northwest of Doncaster. The application site has a postcode of DN6 8LY and is centred on National Grid Reference (NGR) of SE 510 116. The site is situated to the immediate east of a disused railway line. The location of the quarry extension relative to its surroundings is presented in **Drawing No's. WR7640/10/ESSD1** and **WR7640/10/ESSD2**. The landfill extension area extends over c. 4.5 Ha.

1.2.2 Access to the site is via Straight Lane located to the North of the landfill, which connects to Hazel Lane to the Southwest and Doncaster Lane/Bannister Lane to the Northeast.

1.2.3 All waste recovery operations will be undertaken within a designated area of land, with access directly off the northern quarry extension area boundary. As mentioned above, access to and egress from the site will be undertaken from the main access road (Hazel Lane) which enters the site on the northern edge. Access to the tipping areas is then gained after vehicles have been checked in and Duty of Care documents processed through the staging area situated to the south of the Skelbrooke Quarry Extension Area void, the location of which is illustrated on **Drawing No. WR7640/10/ESSD4**.

1.2.4 The site is situated with a former aggregate quarry which was originally authorised to operate as a non-hazardous landfill site, however, the landfill site never developed and the authorisation to deposit waste was subsequently revoked.

1.2.5 The Skelbrooke Quarry Extension Area is bounded to the north by Hazel Lane beyond which lie open fields, wooded areas and residential properties associated with the village of Skelbrooke. To the east the site is bounded by agricultural fields and the A1 which runs in a North-South orientation. Further agricultural fields are located to the south of the Skelbrooke Quarry with the restored Skelbrooke Landfill Site and operational Hazel Lane Landfill Site located to the west of the Skelbrooke Quarry Extension Area.

1.2.6 Due to its rural setting, residential properties are generally sparse. The closest existing residential properties are discussed further in **Section 2.0**.

1.2.7 The predominant land use surrounding the wider area, as discussed above, is a rural setting. The operation of the adjacent Skelbrooke Landfill Site has been undertaken for a number of years and is also operated by DQL under Environmental Permit Reference EPR/BV1470IE. This landfill is currently fully restored and waste inputs have ceased.

Operational Hours

1.2.8 All waste related operations will be carried out during the times below;

- Monday to Friday: 07:30 – 18:00;
- Saturday: 07:30 – 13.00;
- Sunday/ Bank Holidays: Closed

1.2.9 Maintenance of plant and equipment will be undertaken during operational hours only.

1.2.10 The operator will not undertake the proposed waste recovery operation outside of the hours stated above, unless in an emergency. In such instances, the EA will be notified within 24 hours and the details/activities recorded in the site diary.

2.0 SENSITIVE RECEPTORS

2.1 Receptor Information

2.1.1 The proposed facility sits approximately 7km beyond the north-western outskirts of the city of Doncaster within a predominantly agricultural setting with an industrialised area and commercial/industrial properties located to the west and northeast. Residential properties are situated within the nearby vicinity of the proposed waste recovery operation. Accordingly, residential properties are identified as the closest receptors sensitive to dust emissions.

2.1.2 The nearest residential properties are adjacent to the proposed Environmental Permit Boundary but approximately located approximately 130m to the northwest of the operations area. Further dust sensitive residential properties are listed below in **Table DMP1** and presented in **Drawing No. WR7640/10/ESSD12**.

2.1.3 The remainder of the surrounding land consists primarily of agricultural fields which extending beyond 500m of the proposed site boundary in all directions.

2.1.4 There are no RAMSAR sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Site of Special Scientific Interest (SSSIs), Local Nature Reserves or National Nature Reserves (NNRs) located within 2km of the landfill facility. The site is not located within the any designated AQMA (Air Quality Management Areas).

2.1.5 The site is located within a Nitrate Vulnerable Zone (NVZ) as designated by DEFRA and the Environment Agency for Surface and Groundwater.

Table DMP1: Identified potential receptors within 500m of the facility

ID	Receptor Name	Type of Receptor	Approximate nearest distance from the permit boundary	Direction from the operational areas
R1	Principle Aquifer (Magnesian Limestone)	Groundwater	Underlying	N/A
R2	Doncaster Lane	Public Highway	Adjacent	North
R3	Straight Lane	Public Highway	Adjacent	West
R4	Public Footpaths / Bridle Ways	Public Right of Way	Adjacent – 500m	East / North-East / West / South
R5	Skelbrooke Village	Residential Properties	15 – 500m	North / North-East
R6	Agricultural Land	Agricultural	10-500m	North / East / South / West
R7	Bannister Lane	Public Highway	50m	North
R8	Spring	Spring	290m	East
R9	Stream (Tributary of The Skell)	Waterway	320m	North-East
R10	Skelbrooke Park	Local Wildlife Site (Woodland - Deciduous)	320m	North-East
R11	The Skell River	River	360m	North
R12	Harry Wood	Local Wildlife Site (Woodland - Deciduous)	440m	South

2.2 Meteorological Setting

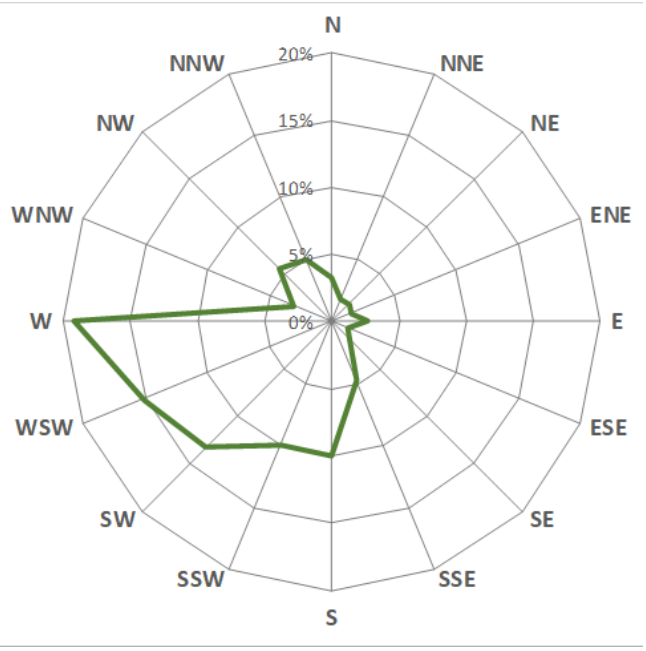
2.2.1 Fugitive emissions of dust from the site are likely to be affected by local weather conditions, in particular by wind direction.

2.2.2 The nearest meteorological station to the site is the Church Fenton Station, EGXG which is situated ~26km north of the proposed waste recovery operation. The weather station is deemed the most appropriate for use in order to characterise the site due to its proximity and its environmental setting. Wind patterns at the Church Fenton Station are likely to be similar to those experienced at the site.

2.2.3 Data from the RenSMART wind data archive, for a 10-year period between 2000 and 2010 for the Church Fenton Station has been utilised in order to typify the meteorological conditions likely at proposed treatment facility. The wind rose, as shown by **Figure DMP1** shows the percentage of wind vector that could be generated in each of the 16 points of a compass.

Figure DMP1: Wind rose for Church Fenton Station between 2000-2010

Direction	Percentage
N	3.22%
NNE	1.77%
NE	1.80%
ENE	1.59%
E	2.59%
ESE	1.21%
SE	1.90%
SSE	4.71%
S	10.01%
SSW	10.02%
SW	13.24%
WSW	15.17%
W	19.17%
WNW	3.10%
NW	5.50%
NNW	5%



2.2.4 The wind rose indicates that the predominant local wind direction is from the western quadrant with the prevailing with significant contributions from the west-southwest / south-west, as seen in **Figure DMP1**. Wind from the north-western quarter occurring relatively less frequently, with winds from the south-eastern and north-eastern, occurring very infrequently. Wind speeds remain below 5m/s for 65.44% of the time. Monthly wind speed averages throughout the year range from 3.8m/s to 5.27m/s.

2.2.5 Upon review of the predominant wind direction it was identified that wind will most likely approach the site from the west. Examination of the surrounding land-use identified that the presence of the active Limestone Quarry at Hazel Lane. It is considered that this industrial activity has a high dust generation potential and that any generated airborne dust would migrate westwards towards and beyond the proposed Skelbrooke Quarry Extension Area.

2.2.6 Furthermore, a review of the western boundary of the Skelbrooke Quarry Extension identified that this boundary is lined with established vegetation (trees

and hedgerows). It is considered that these features will act as a natural barrier to wind gusts at low elevations (i.e. ground level) and will either significantly reduce ground level windspeed or completely shield the site from gusts which will significantly reduce the potential for dust particles to become airborne.

2.3 Additional Sources of Dust and / or Other Emissions

2.3.1 **Table DMP2** lists the other potential sources of dust and emissions, such as Nitrogen Dioxide, located within 1 km of the facility. The below table details the direction and distance of these other potential sources of dust and emissions from the site.

Table DMP2: Additional Potential Sources of Dust and / or Other Emissions within 1km of the Site

Company	Address	Type of Business	Distance from the Site	Direction from the Site
-	Straight Lane	Public Highway	Adjacent	N
-	Doncaster Lane	Public Highway	Adjacent	E
-	A1	Public Highway	720m	E
Catplant Limited	Hazel Lane Quarry Landfill	Quarry / Landfill	730m	W

3.0 OPERATIONS AT SKELBROOKE LANDFILL EXTENSION

3.1 Site Activities

3.1.1 The proposed development is for the infilling of non-hazardous materials into the flooded part of the site as an alternative scheme of restoration. This will be conducted principally to address safety concerns associated with the flooded part of the site. The revised scheme of restoration seeks to re-establish the site to a low-level profile that will bring the ground levels within the flooded section above that of water levels within the void.

3.1.2 The infilling/restoration of the extension area will require the deposit of material below the water table, which currently ranges between 24.3 and 31mAOD (range of groundwater levels recorded in groundwater monitoring borehole SK02), compared to the void basal levels of between 16 and 20 mAOD. In order to achieve the proposed restoration scheme, c. 230,000 cubic metres of non-hazardous material will be deposited. This could be achieved over the period of a year or possibly longer, subject to waste availability. Originally, it was proposed to use a total of ~235,100m^3 of non-hazardous materials. This volume was reduced to provide more capacity and free board space in the surface water lagoon to enable flood attenuation. Furthermore, as approximately 6,000m^3 of the 230,000m^3 will comprise site-won materials, this has reduced the volume of non-hazardous waste required to be imported to restore the site to ~224,000m^3.

3.1.3 It is acknowledged that due to the nature of the material being used for the proposed waste recovery operations at the Skelbrooke Quarry Extension Area, there is a potential for dust emissions to be generated during waste handling and deposition activities. The potential for dust emissions during handling and deposition of incoming materials is in addition to the dust generation potential identified from the acceptance, movement and temporary storage of recovery material alongside vehicle movement within the site.

3.1.4 Incoming material deliveries will be directed by the site operatives to the relevant tipping area for visual inspection prior to deposition within the quarry void. As outlined in the accompanying Supporting Statement (**Doc. Ref.: WR7640/04**) incoming material will either be directly tipped into the quarry void following waste acceptance or, where visual inspection within the delivery vehicle is not possible, waste will be tipped along the edge of the flooded void for inspection.

3.1.5 Prior to the deposition of material within Skelbrooke Quarry Extension Area void, waste acceptance procedures will be undertaken to confirm the nature of the incoming materials and that it corresponds to the information contained within the pre-acceptance paperwork.

3.1.6 Should a load be deposited at the site and found to be non-compliant by machine operatives, the material will be immediately reloaded and rejected off site having given consideration for the relevant Duty of Care requirements. Should the producer/carrier have left the site, this load will be placed in a quarantine area awaiting collection for delivery to a suitably permitted facility. Such events will be recorded in the site diary.

3.2 Potential Sources of Dust

3.2.1 As previously discussed, it is accepted that due to the nature of the material, the handling and deposition of accepted infill material has the potential to generate dust. Furthermore, given that the proposed waste recovery operations

will not be undertaken within enclosed buildings, there is a possibility for generated dust to migrate off-site and cause a nuisance to nearby receptors.

3.2.2 In additional to this, dust generation potential has been identified from the acceptance, movement and handling of potentially dust generating infill materials alongside vehicle movements on site where the surfaces are dry.

3.2.3 Accordingly, dust may arise from the following activities which could be blown off-site towards nearby receptors:

- Materials transfer, unloading and deposition operations;
- Temporary storage prior to deposit in the void; and
- Vehicle movements on surfaced pavements.

3.2.4 Given the close proximity of ongoing mineral extraction operations from the Limestone Quarry situated on Hazel Lane to the west of the Skelbrooke Quarry Extension Area and the main road network (A1) within the vicinity of the site, it is considered that these receptors are currently generating their own dust emissions creating a higher than normal background dust level.

3.3 Mobile Plant & Equipment

3.3.1 The site implements the use of a Dozer and Backacter; these will be Euro Emissions Rated Stage V.

3.3.2 Site plant and equipment will be inspected daily for damage and wear by the site personnel as part of the daily operation and maintanence inspections. Any defects will be noted during these daily inspections will be logged and reported to the maintanence team, so repairs can be scheduled.

3.3.3 Records of inspections will be maintained in a site log. All plant items and equipment will be serviced and maintained according to manufacturer's schedules and recommendations to minimise the risk of breakdown. All maintanence on the plant will be recorded.

3.3.4 Trained maintanence staff will carry out any repairs as quickly as possible. Mobile plant repairs will be undertaken as soon as practicable, dependant on the availability of spares.

3.4 Other Considerations

Water Usage / Availability

3.4.1 A metered mains water supply will be used to support wheel washing and mobile dust suppression where necessary. Additionally, a surface water pond will be maintained on site which can also be used to aid dust suppression while infilling.

In the Event of Drought

3.4.2 Owing to the nature of the site activities, it is not considered that water usage will be high. Therefore, even during drought conditions it is highly unlikely that the site will be adversely affected by a drought. If necessary, or in the event that the mains water supply is lost, mobile dust suppression and wheel washing could be conducted via the use of water brought to site in tankers as additional supply.

4.0 DUST AND PARTICULATE (PM_{10}) MANAGEMENT

4.1 Site Management & Responsibility for Implementation of the DMP

4.1.1 There will be a trained and responsible manager, with the appropriate Technical Competence qualification to manage the facility. The relevant qualified person will be on site for an appropriate duration of time during working hours to maintain the site logbook and carry out regular daily visual and olfactory inspections of fugitive emissions form the site. The Technically Competent Manager (TCM) will be responsible for the implementation of the DMP at the site.

4.1.2 The Site Manager will ensure that this DMP is enforced on site, and its contents are communicated to all employees, visitors and contractors working at the site as part of the induction process.

4.1.3 Should an off-site fugitive dust emission complaint be received, it will be the Site Manager's responsibility to investigate the cause and take corrective action where necessary. In summary, these individuals will:

- Assume responsibility for the management of the site;
- Ensure personnel and operatives are advised of their roles to minimise the generation of dust;
- Conduct visual monitoring at the downwind site boundary daily or immediately following a complaint (this may be carried out by an appointed person);
- Deploy suitable mitigation measures based on visual observation and unfavourable weather conditions (e.g. dry weather with high winds which may aid in dispersion);
- Review the performance of the operatives and efficiency of dust emissions reduction measures; and
- Ensure that equipment if maintained.

4.1.4 A written programme of maintanence will be developed and implemented for all aspects of site operations. Maintanence will include:

- Routine scheduled inspections;
- Preventative maintanence activities; and
- Reactive maintanence activities in the event of any plant breakdown – this will be minimised at all times.

4.1.5 A summary of dust control techniques is provided in **Section 4.3** and **Tables DMP 3** and **DMP 4.**

4.2 Potential Sources of Fugitive Dust and Other Emissions

4.2.1 Fugitive dust emissions may occur during site operations as a result of material handling activities, movement of vehicles on the access road and within the site abnormal operating conditions and exhaust fumes from on-site plant, delivery vehicles and staff/visitor cars.

4.2.2 Based on information presented in the previous sections, it is considered that the potential risks of adverse health and nuisance impacts associated with dust emissions from the site are moderate for the following reasons:

- The waste recovery operations will be overseen by a Technically Competent Manager (TCM) and all site operatives will be thoroughly trained in the use of mobile plant;

- Moderate scale of operations, with limited number of plant movements required;
- Nature of site design: access road and processing areas are engineered/hard surfaced;
- Any limited fugitive dust emissions from the site would likely be a coarse fraction range and would therefore tend to fall rapidly from the atmosphere (i.e. high deposition rates). Hence, airborne dust concentrations would be expected to decrease appreciably with distance from source due to dilution within the atmosphere and deposition onto ground near the source;
- Proactive site management and monitoring and application of site cleansing and dust suppression techniques;
- During periods of high winds, the movement infill materials will be suspended if considered necessary;
- There are no designated Air Quality Management Zones within the immediate vicinity of the site.

4.3 Control of Fugitive Dust and Other Emissions

4.3.1 In light of the moderate inherent risks associated with potential fugitive dust emissions from the operations, a dust control scheme has been prepared in order to provide further confidence that the potential for any adverse impacts will be further reduced.

4.3.2 Control measures for abating dust emissions will be based on best management practices. Details of general dust controls are as follows:

- The hardstanding at the site will be swept upon the identification of visible dust build-up on hardstanding and/or machinery surfaces by the TCM (or nominated deputy) during the daily Operation and Maintenance site inspection where said material could have the potential to result in an unacceptable fugitive emission leaving the permitted site;
- Vehicle circulation routes will be damped down regularly during dry weather;
- Materials will not be dropped from excessive heights into the quarry void or hardstanding;
- A site speed limit of 15mph will be enforced;
- Wind speed and direction will be taken into account when undertaking operations; and
- All site staff will receive appropriate training in order to ensure that employees are conversant with site dust control strategy.

4.3.3 In addition to the aforementioned dust control measures, a mobile water bowser will stored on site and will be utilised to ‘damp down’ the material staging and tipping areas should a risk of dust emissions be identified either by site operatives or the TCM as part of the daily Operation and Maintenance site inspection. The mobile water bowser will also be utilised to dampen hardstanding areas if necessary.

4.3.4 The water utilised for all the dust suppression systems will be supplied by a mains water connection. However, in the event of loss of water supply to the site, water tankers can be brought onto site to provide additional supply.

4.3.5 The mobile water bowser will be used to reduce the presence of dust arising from material handling and will be activated during operational hours; especially

during dry, warm and windy conditions and deployed by site staff upon the identification of a (potential) dust emissions source within the site boundary.

4.3.6 Site Staff will inspect the water bowser daily to ensure that the equipment is operational and to look for signs of normal wear & tear and damage. The mobile water bowser will be fully maintained. During a period where the mobile water bowser is offline for maintenance, the Site Manager, TCM or nominated deputy will arrange for supplementary dust suppression systems to be present on site. The number and type of supplementary dust suppression systems will be determined by the TCM utilising their technical knowledge and operational expertise. The Site Manager and TCM will ensure that supplementary dust suppression systems arrive on-site prior to the commencement of any dust suppression maintenance and remain on site for the duration of the maintenance works. Furthermore, the supplementary dust suppression systems will remain on-site until the TCM has confirmed that the on-site dust suppression systems are fully functional.

4.3.7 The sweeping of hardstanding/concreted areas will be achieved via the use of either manual brushing or a road going road sweeper or a combination of the above. The decision regarding which sweeping techniques are employed will be determined by the TCM after assessing the findings of the daily Operation and Maintenance site inspection. It is important to note that all equipment utilised for sweeping operations will be maintained in good condition according to manufacturer guidance. All material collected via manual or mechanical sweeping will be stored within a sealed container. The collected material will be held within this sealed contained and removed from site by a licensed carrier for appropriate disposal. This sealed container will be located away from vehicle movement routes to prevent the likelihood of collisions which might lead to material spillages. Material collected by the road going street sweeper will be contained within the sweeper and will remain within the street sweeper and removed from site by the street sweeper operator to their facility for appropriate disposal.

4.3.8 The Site Manager or nominated deputy will ensure that sufficient consumables are present on site to operate the dust suppression systems; e.g. diesel, for at least 2 weeks. Should the consumable stockpiles decrease below this 2-week threshold, arrangements will be made by the Site Manager or nominated deputy to replenish these stockpiles, with consumable deliveries to arrive before the on-site stockpiles are exhausted.

4.3.9 Specific control measures for plant and machinery, hauled materials, storage and handling operations, vehicle movement routes, site management and maintenance are considered below.

Plant and Machinery

4.3.10 All plant and machinery will be regularly maintained and washed down using on-site pressure washing facilities available to limit the potential of air-borne dusts. Whereas part of the maintenance regime, all mobile plant is serviced every 500 operating hours by the leasing company. Mobile plant to be operated on the proposed site consist of a dozer, backhoe excavator and a mobile water bowser. The exact make and model of the dozer has not yet been confirmed but it will likely be a CAT D6 dozer[1] or a dozer of equivalent specification which achieves EU Stage V emissions criteria.

[1] *https://www.hawthornecat.com/sites/default/files/content/download/pdfs/Technical%20Specs%20D6%20and%20D6%20XE%20Dozers.pdf*

Hauled Materials

4.3.11 Materials are to be hauled to the site for processing via rigid 6 (or 8) wheeled tipper HGVs trucks. DQL personnel will ensure that the following procedures are implemented during the haulage of materials:

- All vehicles hauling materials will be sheeted enclosed to minimise dust generation;
- Vehicle drivers will be instructed by weighbridge or plant operating staff of how to best deposit the transported material prior to the commencement of unloading activities. Furthermore, additional instructions will be provided by supervising personnel should any unforeseen circumstances ben encountered during unloading activities (e.g. change of prevailing weather conditions);
- Vehicles will be supervised during unloading to ensure that they deposit materials correctly;
- The mobile water bowser will be used during material unloading (if there is the potential for a fugitive emission of dust to occur that could leave site).

Storage and Handling Operations

4.3.12 As previously stated, there are no proposals for the storage of accepted infill materials prior to deposition within the Skelbrooke Extension Area Quarry Void with all material immediately deposited into the quarry void upon completion of the Waste Acceptance procedures. To minimise the potential for carrying debris outside the proposed material tipping area, the site will be swept upon the identification of visible dust build up by the Technically Competent Manager (or nominated deputy) during the daily Operation and Maintenance Site Checks. The definition of 'visible' dust will be determined by the Technically Competent Manager who will utilise their technical judgement and expertise to determine an appropriate threshold. To ensure that his threshold is uniformly applied between by the Technically Competent Manager and the nominated deputy the latter will undergo training (which will be refreshed annually) by the Technically Competent Manager to ensure consistency. Additionally, hardstanding areas will be kept clear of material likely to have the potential to cause dust from being windblown or from being driven over by plant and vehicles.

4.3.13 The mobile dust suppression equipment will be used for handling operations and significant transfer points (including deposition into the Skelbrooke Extension Area Quarry void). In the event that operations on site give rise to a significant amount of justified complaints in relation to dust, the operator will review its activities, and provide additional dust control measures if considered appropriate.

Vehicle Movement Routes

4.3.14 Vehicle movements can potentially generate an appreciable amount of dust. To minimise the generation of dust on the public highways and entering/leaving the site, it is a requirement that all vehicles carrying potentially dusty loads are covered or sheeted with an impermeable covering, with this requirement confirmed in writing to the customers upon completion of waste pre-acceptance checks. Whilst there is little potential for the deposit of dust and mud on the wheels or bodies of vehicles, pressure washing facilities are available on site should they be required. Dust control measures include:

- Dampening down of haul routes with water (as necessary and during dry, warm and windy conditions utilising suppression equipment referred to above);
- Vehicle speeds within the site would be restricted to a maximum speed of 15mph;
- All loads to be covered and sheeted prior to arrival at the site;
- Use of a pressure washer to clean vehicles prior to exiting the facility.

4.3.15 It is considered that the presence of the aforementioned pressure washer will be sufficient for proposed site operations. This is due to the fact that vehicles are travelling across a surface (concreted) area hence will not be picking up large quantities of mud from on-site movements.

Site Management

4.3.16 There will be a trained and responsible manager, with the appropriate technical competence qualification to manage the facility. The relevant qualified person, or appointed representative will be on site for an appropriate duration of time during working hours to maintain the site logbook and carry out regular daily visual inspections of dust pollution from the facility.

4.3.17 The Site Manager or Technically Competent Manager (TCM) will ensure that this Dust Management Plan is enforced on site, and its contents are communicated to all employees, visitors and contractors working at the site as part of induction process.

4.3.18 Should an off-site fugitive dust emissions complaint be received with regards to, it is the Site Manager/TCM's responsibility to investigate the cause and take corrective action where necessary. In summary, the Site Manager or TCM will:

- Assume responsibility for the management of the site;
- Ensure personnel and operatives are advised of their roles to minimise the generation of dust;
- Visual monitoring of downwind site boundary by site manager or appointed person on an ongoing basis or immediately following a complaint;
- Deploy suitable dust mitigation measures based on visual observation and weather conditions;
- Review the performance of the operatives and efficiency of dust reduction measures;
- If problems persist, review, and if appropriate, revise dust control measures;
- Ensure that records are maintained;
- Ensure that equipment is maintained.

Maintenance

4.3.19 A written programme of maintenance will be developed and implemented for all aspects of site operations. Maintenance will include:

- Routine scheduled inspections;
- Preventative maintenance activities;
- Reactive maintenance activities in the event of any plant breakdown – this will be minimised at all times.

4.3.20 A summary of dust control techniques is provided in **Tables DMP3** and **DMP4**.

4.4 Dust Action Plan

4.4.1 In the event that dust is observed, an unacceptable dust impact is caused at a nearby sensitive receptor, and a justified complaint is received by the site management, the 'Dust Action Plan' will be implemented. Dust sensitive receptors identified within 500m of the proposed site presented in **Table DMP1** and depicted in **Drawing No. Number WR7640/10/ESSD12**.

4.4.2 It is the responsibility of all site personnel to maintain a visual awareness of dust emissions during the working day as part of continual proactive environmental monitoring. Any significant dust emissions occurring with the potential to travel beyond the site boundary will be reported to the Site Manager/Supervisor who will be responsible for investigating the cause and taking immediate action to minimise further emissions.

4.4.3 If an activity at the site results in the generation of unacceptable levels of dust, then that activity shall cease until sufficient measures have been adopted which prevent or minimise the dust emission. Unacceptable levels of dust are classified as visible plumes of dust identified which have the potential to leave the site boundary.

4.4.4 The Site Manager or TCM will also be responsible for weekly record monitoring of dust levels and conditions associated with the potential for fugitive emissions of dust. However, general daily visual checks/observations will be carried out as part of their normal operational procedures which will consider fugitive emission. In particular, this is in relation to:

- Dry surfaces where mud or debris is present;
- Any part of the site where movement of vehicles may generate dust;
- Any part of the site where dust may be generated by wind;
- Material handling operations

4.4.5 The Site Manager/TCM shall implement adequate dust suppression measures to control dust from any activity which has the potential to generate unacceptable emissions of dust.

4.4.6 If routine visual monitoring; or continual proactive monitoring, identifies the generation of significant visible volumes of dust, including dust on site plant and airborne dust either migrating off site or having the potential to cross the site boundary and impact identified receptors then the following actions will be taken by the TCM or nominated deputy:

- Take immediate steps to establish the cause of the abnormal emissions;
- Upon identification of the emission cause, the offending operation shall be suspended (if mechanical source) or isolated (if passive source) and undertake corrective actions;
- Implement corrective action, such as the use of mobile water bowser;
- Offending emission sources shall be suspended/isolated until correction actions have been completed or adverse weather conditions have subsided;
- Once corrective actions have been completed or adverse weather conditions have subsided activities at the offending emission source will recommence under supervision from the TCM or nominated deputy for 30 minutes;

- If no further dust emissions are observed, then activities can continue without TCM (nominated deputy) supervision. If further dust emissions occur, then activities will be suspended again, and the relevant corrective actions/supervision are repeated until no longer required;
- Enter actions into site logbook.

4.4.7 In the event that control methods cease to adequately deal with an emission of dust, appropriate arrangements will be made by the TCM to suspend operations until the situation that gave arise to the emission has been resolved. The Environment Agency will be informed at the earliest practicable opportunity or by end of operational hours.

Table DMP3: Source-Pathway-Receptor Model for dust Emissions at Skelbrooke Landfill Extension

Source	Pathway	Receptor	Type of Impact	Dust Control Measures
Mud	Tracking of mud and debris on wheels and vehicles which may drop off when the wheels / vehicle is dry.	See list of potential sensitive receptors in **Table DMP1.**	Visual soiling, consequent resuspension as airborne particles once dry.	A maximum vehicle speed limit will be enforced at the site and will be communicated via signage and staff training. This will reduce the risk of wheels kicking up mud and / or dust on site surfaces which may become airborne. Where possible, site surfaces will have engineered surfacing which will be able to be cleaned to avoid the build up of mud and dust on the haul road etc. A mobile pressure washer will be available to dampen or wash down any dusty areas of the site. Daily visual dust monitoring will be conducted to identify any must or dust on site surfaces as soon as possible to allow for remediation (such as cleaning with the pressure washer).
Mobile plant for the lifting and movement of materials	Dust and debris falling off mobile plant when dry and subsequent atmospheric dispersion. Atmospheric dispersion of dust and debris during lifting and movements of materials on site using mobile plant; particularly in dry conditions.	See list of potential sensitive receptors in **Table DMP1.**	Visual soiling, consequent resuspension as airborne particles once dry.	Undertaking lifting and movement of dusty materials whilst using a mobile water bowser to dampen the materials. Minimising drop heights when unloading material. Protection from exposure to wind where possible.
Vehicles for transport of material within the site	Dust and debris falling off vehicles within the site when dry and subsequent atmospheric dispersion.	See list of potential sensitive receptors in **Table DMP1.**	Visual soiling, consequent resuspension as airborne particles once dry.	Minimisation of on-site transportation distances. Use of a pressure washer to clean vehicles prior to movement off-site. Sweeping of roads during dry weather to limit visible dust emissions. Restriction of vehicle speeds via signage and staff training to reduce the risk of dust suspension due to vehicle wheels. Covering of the site by engineered surfacing.
Vehicle exhaust emissions	Atmospheric dispersion.	See list of potential sensitive receptors in **Table DMP1.**	Airborne particulates.	All vehicles servicing the site will have either Euro 5 or 6 emission classified engines. Drivers will be advised by site operatives to not leave vehicles idle when engine power is not required.

Table DMP4: Preventative and Remedial Measures to be used on Site to Control Dust and Other Emissions

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures			
Engineered site surfacing where possible.	Where possible, site surfaces will be engineered to enable cleaning and reduce the amount of dust and particulates that are generated at ground level by vehicles and site activities.	The engineered site surfaces will be cleaned and maintained as good practice.	This will be implemented for the duration of the site's operational period. There are not considered to be any limitations to this abatement measure.
Site speed limit and 'no idling' policy and minimisation of movements on site.	The site will have a maximum speed limit in order to limit the amount of dust suspension by vehicle's wheels. Vehicle movements on site will be kept at a minimum to avoid dust suspension. A 'no idling' policy will be employed at the site to reduce unnecessary emissions from vehicles on site.	These measures are employed as good practice.	These measures will be utilised for the duration of the site's operational period.
Use of a bowser for dampening down site surfaces.	Water will be used to dampen down and wash off residual materials from site surfaces to prevent dust emissions. In the unlikely event that vehicles entering the site are heavily soiled with mud or debris, they will be hosed off and cleaned to avoid the tracking of mud and debris.	This abatement measure is implemented as appropriate measures. Hosing of surfaces have proven results. The water hose will be connected to the mains water supply.	This will be implemented for the duration of the site's operational period. There are not considered to be any limitations of this abatement measure.
Minimisation of drop heights when unloading material.	During waste unloading, drop heights will be minimised to prevent significant plumes being generated.	These measures are employed as good practice.	These measures will be utilised for the duration of the site's operational period.
Remedial Measures			
Use of a pressure washer for washing of site surfaces, vehicles, plant and equipment.	The cleaning of site surfaces, vehicles, plant and equipment will ensure that any dust or debris that has settled is dampened down and washed into the appropriate surface water drainage route. This will ensure that suspension and airborne dispersion does not occur.	This method is highly effective at reducing the risk of dust emissions and preventing the build-up of particulates on site surfaces.	This will be implemented when required for the duration of the site's operational period and will be undertaken when appreciable dust or debris is observed on site surfaces.
Sweeping of roads during dry weather to limit visible dust emissions	The sweeping of roads during dry weather will limit the suspension and airborne dispersion of dust and particulates.	This method is highly effective at reducing the risk of dust emissions and preventing the build-up of particulates on site surfaces.	This will be implemented when required for the duration of the site's operational period and will be undertaken when appreciable dust or debris is observed on site surfaces.

4.5 Monitoring and Recording Protocol

4.5.1 It is the responsibility of all site personnel to maintain an ongoing, visual awareness of dust emissions during the working day. This will ensure that continual, proactive, site-wide, visual monitoring of dust plumes are conducted, and management techniques applied to mitigate as appropriate.

4.5.2 Established large scale industrial operations and transport routes are in the vicinity of the Skelbrooke Quarry Extension Area. In addition to this, there are agricultural fields situated to the immediate North, East and South. The nearest residential properties are located approximately 130m to the northeast of the operational areas, along Doncaster Lane. With cognisance to the wind rose presented in **Figure DMP1**, it can be noted that the predominant wind directions are from the west, southwest, south-southwest and south. It can be observed from **Figure DMP1** that the wind will be principally be blowing in an eastern direction away from closest residential and immediate ecological receptors. It is considered appropriate to conduct qualitative monitoring of potential dust emissions due to the intervening distance between site operations and the nearest sensitive receptors.

4.5.3 Any significant dust emission occurring with the potential to travel beyond the site boundary will be reported to the Site Manager/TCM who will be responsible for investigating the cause and taking immediate action to minimise further emissions. Should a dust plume be identified, the Site Manager/TCM will implement the Dust Action Plan (as described in **Section 1.9** above) to prevent the transfer of dust off-site. If necessary, site operations will be halted until appropriate remedial action is completed.

4.5.4 The Site Manager/TCM or nominated deputy will carry out daily visual checks for dust as part of their normal Operation and Maintenance checks. This is to check for abnormal levels of on-site dust creation and off-site deposition. If this is found, the cause will be investigated, and remedial action will be taken where necessary. If remedial action is required e.g. dust suppression, this will be recorded in the site diary. Completed Operation and Maintenance Daily Check sheets will be stored within the site office and to ensure continuing competence will be reviewed daily by the Site Manager or other appropriate member of senior management.

4.5.5 The visual checks will be undertaken during the daily Operation and Maintenance checks. These checks will examine conditions across the entirety of the site, ensuring that a comprehensive understanding of site conditions is always maintained. Due to the extensive nature of these checks it is proposed that a site wide picture of dust levels will be recorded.

4.6 Particulate Matter Monitoring

4.6.1 The site does not require Particulate Matter Monitoring as it is not within an AQMA and owing to the site activities and emission sources at the site, there are limited sources of fine exhaust emissions.

5.0 REPORTING AND COMPLAINTS RESPONSE

5.1 Engagement with the Community

5.1.1 DQL will operate an open communication channel with the local community who may be affected by the facility's operations. The Site Manager or TCM will liaise with neighbouring residential properties every quarter for the first year of operation, and annually thereafter to determine if the facility is causing a definable adverse impact off site. Appropriate contact information (e.g. telephone number and e-mail) will also be displayed at the site entrance.

5.1.2 The facility will be a reliable source of information to the community and readily available to answer any questions of queries. Active participation in the community will ensure that communication channels such as emails and phone calls are welcomed, and an appropriate response is provided by the Site Manager, TCM or nominated deputy in their absence.

5.1.3 The site will also operate a comprehensive complaint reporting and resolution procedure which can be utilised by members of the public and neighbours.

5.2 Means of Contact

5.2.1 The facility will be readily contactable to outside organisations and to members of the public. The site signage board (placed in a readily visible location such as the site entrance) contains the necessary contact details for both the site operators and Environment Agency. Therefore, should an off-site issue arise, the complainant has a readily available means of getting in touch with the operator.

5.2.2 Any complaints received directly to site during operational hours will be notified to the Environment Agency as soon as practicably possible and at the latest by the end of operating hours on the same day. Any complaints received outside of operational hours will be notified to the Environment Agency by the end of operational hours of the next working day to ensure that a thorough investigation process can be completed.

5.3 Complaints Process

5.3.1 Any complaints received at the Facility from members of the public or via the Regulatory bodies (including Environment Agency and Local Authority), will be recorded and further observational monitoring instigated at the location of the complaint and on site to determine the extent and location of the fugitive emission, and the materials and / or process at the source will be identified. In order to assist in the investigation and determining the source of the emission, as much information and detail about the complaint as possible will be recorded.

5.4 Recording of Complaints

5.4.1 Should a complaint be received, the following information will be recorded in a Dust Complaint Report Form (**Appendix DMP2**):

- Complaint details (including address of complainant wherever possible) and the location where emission is perceived;
- Weather conditions including atmospheric pressure, wind speed and wind direction;
- Results of latest Operation and Maintenance Daily Inspection carried out by facility personnel;

- Operational status of the facility (noting any abnormal conditions that may have caused the complaint);
- Details of the proposed corrective action if required.

5.4.2 Records of complaints received will be kept in the appropriate file in the site office for inspection and review by both internal and external personnel. Each complaint received will be afforded the same level of priority and will be treated as a matter of urgency and investigated utilising the complaints investigation process outlined below. Senior management will be informed of any complaint received regarding the proposed site.

5.5 Complaints Screening

5.5.1 As part of each fugitive emission complaint received, these will be objectively assessed against the wider environment to ensure that the source of the emission is traced back to the correct source. Due to the presence of large-scale industrial operations in the vicinity of the site, it is essential that the source is correctly identified in order that mitigating measures can be applied effectively and correctly. If necessary, the complaint will also be assessed against previous records to place the nature of the complaint into context.

5.6 Complaint Investigation

5.6.1 In the event that fugitive emissions are found to be causing a problem at or around the Facility, as determined and confirmed by investigation into off site complaints or during routine monitoring; measures will be taken to determine the source, and the following courses of action as detailed below shall be taken within two full (working) days of complaint receipt:

- Additional dust monitoring as detailed above to identify the extent of the plume and potential cause for the dust i.e. waste material and / or process activity;
- Examination of the operational activities at the Facility at the time of the dust complaint or dust identification;
- Examination of the meteorological conditions at the time of the complaint or dust identification;
- Carry out a review of the operational procedure and process controls and instigate any control measures immediately following identification of the problem;
- Further dust monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

5.6.2 Due to the potential for dust emissions to be generated from both operational activities (e.g. movement of vehicles and operation of treatment equipment) and passive dust sources (e.g. material stockpiles and road surfaces) it is proposed that site operations are not be suspended until such time as the source is identified. Upon identification of the dust emission, this source will be isolated and appropriate mitigation measures will be applied.

5.6.3 Once the complaints investigation procedure has been completed the findings will be collated and a formal written response summarising the findings of the investigation (and action taken) will be provided to the complainant. This response will be submitted to the complainant within five full (working) days of complaint receipt. If a summary response cannot be generated in this timeframe, the complainant will be informed of the progress and advised on when the summary response document will be provided.

5.7 Management Responsibilities

5.7.1 The complaints will be handled by the Site Manager who will investigate it as soon as possible. Upon completion of the 'Dust Complaint Form', the Site Manager will review the site conditions and come to a conclusion on how best to tackle the issues raised by the complainant. Once an action is in place, the Site Manager will ensure that the complainant is informed, and the final outcome will be recorded in the 'Dust Complaint Form'.

5.7.2 Where more than one complaint is received within one month, senior management will be notified, and appropriate remedial measures identified and implemented accordingly.

6.0 ACTIONS, CONTINGENCIES & RESPONSIBILITIES DURING PROBLEM EVENTS

6.1 Default Procedures

6.1.1 In the event that an emission of dust is identified during the normal course of site activities, either through daily routine monitoring, or in response to off-site complaints, the default procedure will be to investigate the emission in line with **Section 5.6** above, which is an appropriate response to both off site complaints as well as on site investigations following on from routine inspections.

6.1.2 It is the responsibility of the site management team (Site Manager / TCM and associated supervisors) to ensure that the procedures set out in this DMP are put into action.

6.2 Accident and Emergency Contingency Procedure

6.2.1 During the event of an emergency/accidental release of significant quantities of dust, immediate measures will be taken to identify the cause of the abnormal emissions. Monitoring for dust emissions will be undertaken during a time in which extreme release of dust is experienced e.g. during waste hauling.

6.2.2 Upon determining the emission cause, the implicated operation, whether active, such as waste handling, or passive, like dust residue in a storage area, will be promptly suspended or isolated, and corrective actions initiated. These actions involve measures such as using a jet washer for wheel washing and employing manual or mechanical sweeping for site surface cleaning. The emission source will remain suspended or isolated until corrective actions are successfully completed.

6.2.3 Following the completion of corrective measures, activities at the emission source will resume under the supervision of the TCM or a designated deputy for a duration of 30 minutes. If no further dust emissions are observed during this period, activities can then proceed without TCM (or nominated deputy) supervision. However, if additional emissions are noted, activities will be suspended once again, and the relevant corrective actions and supervision repeated until deemed unnecessary. A comprehensive record of all actions and explanations will be diligently maintained in the site logbook/diary.

6.2.4 If control methods prove insufficient in addressing a dust emission, the TCM will take necessary steps to suspend operations until the underlying issue causing the emission is resolved. The Environment Agency will be promptly notified at the earliest suitable opportunity.

6.3 Adverse Weather Conditions

6.3.1 Suitable dust mitigation measures will be employed during unfavourable weather conditions (e.g. dry weather with high winds which may aid in dispersion). Dust emissions will be continuously monitored during windy periods to ensure that activities do not give rise to significant emissions.

6.3.2 Dust mitigation measures that will be implemented during adverse weather conditions will include:

- Regular sweeping of hardstanding and machinery surfaces upon visible dust build-up.
- Material collected through sweeping will be stored in sealed containers and removed offsite for appropriate disposal.

- Regular dampening of vehicle circulation routes in dry weather through the use of a mobile water bowser.
- In case of water bowser malfunction, supplementary dust suppression systems will be arranged and utilised until issue resolved.
- If operations on the site result in a considerable number of valid complaints regarding dust, the operator will assess its activities and implement additional dust control measures if deemed suitable.

6.3.3 In instances where weather conditions are deemed excessively adverse for operations, any activities with the potential for dust emissions will be temporarily halted until conditions improve.

6.4 Event Reporting

6.4.1 In the event of any significant environmental emergency / incident, a representative of Darrington Quarries Limited will contact the Environment Agency via telephone to notify them immediately, but first having due regard for the incident at hand and any remediation actions required to ensure the safety of site personnel and the immediate environment.

6.4.2 Details of any environmental incident will be confirmed to the Environment Agency in writing by the next working day after identification of the incident. This confirmation will include the time and duration of the incident, the receiving environmental medium or media where there have been any emissions as a result of the incident, an initial estimate of the quantity and composition of any emission, the measures taken to prevent of minimise any further emission and a preliminary assessment of the cause of the incident.

6.4.3 Any incident notified to the EA will be investigated, and a report of the investigation will be sent to the EA. This report will detail (as a minimum):

- The circumstances of the incident;
- An assessment of any harm to the environment; and
- The steps taken to bring the incident to an end.

6.5 Problem Resolution

6.5.1 Once the identified problem has been rectified, a report will be prepared assessing the nature of the incident and the actions taken to resolve the issue. Additionally, the report will detail the changes that could be made to the operational practices which would ensure, wherever possible, that the issue would have less chance of arising again in the future.

6.5.2 This Dust Management Plan (DMP) and the dust/particulate related assessments of risks presented in the Environmental and Accidents Risk Assessment (*Doc Ref.: WR7640/08*) will also be reviewed if management practices require updating.

6.5.3 This information will be provided to the EA in accordance with the Event Reporting procedures discussed in **Section 6.3**, above. Any improvements or amendments to operational practices will be discussed with the EA prior to their implementation.

7.0 REPORT CLOSURE

7.1.1 This Dust Management Plan (DMP) outlines the overall approach taken by a site operator to ensure that dust emissions are minimised, measured, remediated as necessary.

7.1.2 The location of the facility is within predominantly agricultural area to the northwest of Doncaster. The majority of receptors immediately adjacent to the eastern, northern and southern site boundaries consist of open agricultural fields with the restored Skelbrooke Landfill Site located adjacent to the western boundary. It is considered that these receptors will be of low sensitivity to any potential emissions of dust.

7.1.3 Notwithstanding the receptor classification, given the application of appropriate documented management techniques at the site, the potential for fugitive emissions of this nature will be strictly limited, therefore the risk to the nearest residential and immediate ecological receptors is considered to be low.

7.1.4 Additionally, given the management techniques applied on site, as well as surrounding activities (limestone mineral extraction and main roads) and the general prevailing wind direction (from the west) it is considered the risk to the nearest residential receptors is low as any fugitive dust will be blown away from these receptors.

7.1.5 By implementing best practice measures to control and mitigate the generation and transportation of dust, it is considered that dust emissions from the site can be adequately controlled.