Dust Management Plan

Saxon Brickworks, IBA recycling facility

Report version	Issue date	Issue by	Comments
1	29/09/2020	Stuart Thompson	New Doc
2	19/12/2020	Stuart Thompson	Additional map
3	17/05/2021	Stuart Thompson	Updated to address, Schedule 5 comments
4	24/05/2021	Stuart Thompson	Updated to reflect the comments of the EHO
5	10/08/2021	Ana Afonso	Re write of DMP to address the EA comments
6	30/09/2021	Ana Afonso	Updated to reflect EA comments – published to planning
7	08/10/2021	Ana Afonso	Updated to reflect EA comments
8	04/11/2021	Ana Afonso	Updated to reflect EA comments
9	11/12/2021	Ana Afonso	Updated to reflect EA comments
10	14/12/2021	Ana Afonso	Updated to reflect EHO comments
11	26/01/2022	Ana Afonso	Updated to reflect EHO comments
12	02/02/2022	Ana Afonso	Updated to reflect EHO comments
13	08/07/2022	Ana Afonso	Update to reflect changes to site equipment
14	06/07/2023	Ana Afonso	Annual review, minor changes
15	July 2024	Trevor Burton	Updated to support permit variation V002

Documents are to be reviewed at least yearly.

Johnsons Aggregates & Recycling Ltd (JARL) with Head Office in Merlin Way, Quarry Hill Industrial Estate, Ilkeston, DE7 4BG. We specialize in the transfer and treatment of IBA, C&D processing and the recovery of ferrous and non-ferrous metals.

Contents

1.1 Background

The purpose of this Dust Management Plan (DMP) is to:

- Establish the likely sources of dust arising from the IBA recycling facility
- Set out the procedures followed at the site to prevent or minimise dust emissions; and,
- Formalise the procedures for dealing with any dust complaints
- Promote continuing improvements relating to dust/particulate control championed by senior management by using (at least) periodic review and when applicable update the DMP to reflect improvements, procedural changes, legislative change or best practise

This DMP had been designed to:

- Employ appropriate methods, including monitoring and contingencies to control and minimise dust
- Prevent unacceptable dust pollution and or nuisance, and minimise the generation of dust/particulates produced by Site activities, as far as is reasonably practicable, using the appropriate best practise measures.
- Reduce the risk of dust escaping incidents or accidents by anticipating them and planning accordingly
- Mitigate the potentially adverse impacts of the residual emissions of dust and particulates after all appropriate control measures have been applied, with due regard to the sensitivity of the local surroundings i.e. local businesses and residential areas located near the Site, local footpaths, local schools and recreational grounds;
- Monitor the effectiveness of the dust/particulate control measures, by means of on-site real-time continuous PM10 measurements and the below
    - Visual monitoring of dust emissions and deposition (daily Site walkovers)
    - Annual dust monitoring programme
    - Occupational health personal dust monitoring programme.

- This DMP has considered sources, fugitive emissions and impacts, and used these to identify opportunities for dust management.

1.2 Site location and context

The site is located at Saxon Works, Peterborough Road, Whittlesey, Cambridgeshire. PE7 1PJ. The site is in the location of a former brickworks, see photo 1, and is located within the excavation associated with the former works.

Site operations will include the receipt, storage, processing and distribution of Incinerator Bottom Ash (IBA)/Incinerator Bottom Ash Aggregates (IBAA)/C&D waste and the recovery of ferrous and non-ferrous metals.

Photo 1: IBA Site, Saxon Works

The DMP covers only the JARL operations and occupied portion of the site at Saxon Works Whittlesey, the operation of the plant may result in dust emissions from a number of activities. These have the potential to cause adverse effects at sensitive locations within the vicinity of the site. As such, suitable measures to ensure impacts are effectively controlled have been formalized within this DMP.

This DMP forms part of the Environmental Management System (EMS) for the operation of the Site and will be adhered to by all staff and visitors. Staff and visitors will receive training in the contents of this DMP taking into consideration their position and the potential affect their actions may have in the site's operation.

2.0 Operations at Saxon Pit IBA processing facility

2.1 Introduction

Benefits of the treatment of Incinerator Bottom Ash & C&D waste are summarized below:

- Improve the quality of the material to generate a product with the potential to be a direct substitute for virgin aggregate.
- further recycling of ferrous and non-ferrous metals using mechanical separation; and,
- the use of the IBA Aggregate as a manufactured aggregate material suitable for use in construction projects.
- reduce the use of virgin aggregates to prepare the final products with the processing of C&D waste
- contribute to the national recycling infrastructure with the IBA received for processing and the recycled aggregates produced.

2.2 Management

The overall management responsibility for the plant will lie with JARL (all staff employees are employed by JARL). The day to day business operation will be undertaken by the Site Manager or his deputy when the SM is not available. Each unit supplied and installed on site has a specific technology provider.

Training will be provided to the relevant staff by the technology provider - to ensure all aspects of the facility are operated safely and as intended

2.3 Operations

Material accepted onto site can be processed using the following methods:

- Unprocessed IBA will be imported to the Site and stored outside before undergoing a cooling and ageing process;
- The IBA will then go through vibrating screens and magnetic metal separation removing ferrous and non-ferrous metals and producing different sized fractions of Incinerator Bottom Ash Aggregate (IBAA).
- Construction and demolition and other waste materials will be crushed and/or screened
- IBAA for further screening (or polishing) and crushing to enhance material recovery including metal recovery
- Screened C&D material and IBAA can be mixed dependant on the customer's requirements for the final product
- mixing waste material at clients request will be done in the west side of the site, see appendix 1 for the site layout

2.3.1 Waste deliveries to Saxon Pit IBA recovering facility,

The incoming waste (IBA, IBAA, C&D waste and metal waste recovered from IBA) will delivered to site by vehicles that enter and exit through the main site entrance, shown on Site Plan. All loaded vehicles must be sheeted when entering or leaving the site. Wastes arriving at the site will be visually inspected to ensure that the waste is suitable for delivery. Checks will be made to ensure that the waste conforms to the description written on the accompanying Waste Transfer Note and permit conditions.
If there is any doubt of the nature of the incoming material, a final decision will be made as to whether to quarantine, accept or reject the load in accordance with the "Working Plan" document. Waste acceptance and Collection; Waste rejection.
Records of IBA received at the Site will be kept, in accordance with the Site Waste Acceptance Procedure.
Records are kept for a minimum of 2 years or as required under relevant legislation.

Accepted IBA deliveries are tipped in the main IBA reception area (see appendix 1), this area is surrounded by a 5.6m high lego block wall which will be increased to a height of 7.2m following

issue of variation V002 of the permit. A drawing showing a typical section of the perimeter wall is provided at Appendix 11. The material being tipped is a mix of smaller material and coarse material and the drop height is less than 1m.
The lego wall protects the material from the prevailing winds, all deliveries are monitored by site staff. We expect the material to settle quickly after being tipped because of its size, but as a preventative control measure if the weather is dry the sprinklers will be deployed in the tipping area (as well as when the material is being handled) to help any potential dust to settle.

2.3.2 IBA Storage and Quarantine

The potential for air emissions from the Incoming IBA Storage and Quarantine Area will be mitigated using water-based control methods.

In-coming IBA has an average moisture content of, around 15% - 24%. This moisture content is maintained within the typical range 15-20% with regular spraying of the pile as required.

The regular turning of material consists only of the material in the face of the stockpile to allow for the daily processing, this does not refer to the total amount of waste stored in the IBA area.

Site staff will regularly test the physical parameters of the received IBA, including water content. This testing will be undertaken at a frequency deemed to be representative of the variation in incoming loads. This information will be added to the site diary. This ensures that the imported material is suitable for treatment and whether additional water is required to facilitate the maturation process. The moisture content of the IBAA is also monitored (internal objective is to keep the IBAA moisture content in the typical range 15 to 20%) and additional water added if necessary to prevent dust release.

The IBA material absorbs the water and forms a crust, this reduces the potential for any dust being released when the stockpile is not disturbed. Its common practice in the industry to apply an ageing period of 6 to 20 weeks before processing, and an ageing period of a minimum of 6 weeks will be applied at the site.

Therefore we consider the potential for dust associated with the stockpiling of IBA within the incoming IBA Storage and Quarantine Area as negligible, when applying the dust suppression measures described in the DMP. This information is based and aligned with 4.7.7 techniques to reduce emissions to air from the treatment of incineration slags and bottom ashes from BREF (Best Available Techniques (BAT) Reference Document for Waste Incineration, 2019) in the technical description where using techniques that keep the bottom ashes water content around 20% reduces the diffuse emissions of dust. This involves maintaining an optimal moisture content which allow to keep the dust releases low.

2.4 Overview of IBA Processing and Dust Controls

Unprocessed IBA will undergo a cooling and ageing process once received on site (only non haz material). The ageing process is characterized by the leaching of salts and carbonation by frequent wetting and turning the material over to ensure homogeneous process conditions. The purpose of the ageing process is to reduce the remaining reactivity and to improve the technical properties of the IBAA. While pulling the material down in preparation for processing, the mobile sprinklers will be operational to minimize the potential for dust to be generated. In the event that the material becomes cementitious (ie agglomerations/clumps of material form), these agglomerations (also referred to as oversize IBA/IBAA) will be broken up following the maturation period using a crusher prior to further processing (screening, metal recovery etc). The crusher will be employed on a campaign basis. The maximum annual quantity of oversize IBA/IBAA for crushing will be less than 20,000 tonnes. Based a crushing rate of 1,000 tonnes per day, it is anticipated that the crusher will be employed on no more than 20 days per year. This activity is undertaken in the yard, outside of building 1. Further details of the activity are presented in the Best Available Techniques (BAT) assessment presented with the application for V002 of the permit. The BAT assessment concludes that based on the risk posed by the activity and the implemented control measures, the crushing activity does not need to be undertaken within an enclosed building. The control measures and monitoring (to confirm the effectiveness of the control measures) include the general site wide measures included in this dust management plan and the following:

- Dust suppression will be in place either external to the crusher or via spray bars built into the crusher to minimise dust formation during the crushing process
- A mobile water cannon is available to be used when the crusher is mobilised
- Undertaking of the activity at a location that takes into consideration the prevailing wind direction
- A commitment to postpone or cease activities, such as crushing, if the meteorological conditions (high winds) preclude effective particulate matter control.
- Crushing on a campaign (non continuous) basis.
- Protection provided by the perimeter lego block wall
- Visual monitoring by site personnel during the crushing activity to confirm that unacceptable emissions of visible dust are not being generated and to inform any additional suppression which may be required.
- Continuous monitoring at the site for Particulate Matter PM10 at fixed locations. As the monitoring is continuous, records can be compared to the time periods during which crushing campaigns are being undertaken and the data can be reviewed to determine whether the emissions from the crushing activity are significant in the context of the overall site operations.

Samples of IBA are tested for moisture content. If moisture content is <15% dampening is increased - if it is higher than 24% then dampening is reduced and the turning of material increased. Results are recorded on the lab daily log.

The application to vary the permit (V002) proposed an increase in the maximum stock pile height of IBA from 4.6m to 6.7m. The lego wall, which currently is 5.6m high, will be increased to 7.2m (see Appendix 11) following issue of variation V002 of the permit to maintain a minimum free

board of 0.5m as specified in EA guidance Control and monitor emissions for your environmental permit (Published 1 February 2016. Last Updated 24 November 2022). IBA loads are removed from the stockpile with a 360 excavator, then delivered by front-end loading shovel to a holding bay adjacent to the loading area. The moisture content of the material (15-20%) ensures that little or no dust is created during this process.
The load is delivered to a holding bay adjacent to the loading area.
A front loading shovel is used to feed the hopper with loads of approximately 7-8 tonnes. The height drop is to be kept at <1m to prevent the potential for dust to be generated. This is ensured by giving adequate training to the driver and checked as part of the daily visual inspections detailed in Section 4.6.

The hopper feed level is maintained at a level as to cushion the following load, reducing friction and the conditions in which dust may be created. The hopper has a misting line installed to reduce the dust potential. If any dust is experienced during the loading process the operation would be suspended while the feed-pile is dampened down. Loading would be closely monitored to ensure adequate damping had been applied to maintain the moisture content at between 15 and 20%.

The IBA will then continue to be processed within building 1 & 2 using the following techniques:

- vibrating screens
- air tables
- magnetic metal separation removing ferrous
- removal of non-ferrous metals and
- further screening producing different sized fractions of Incinerator Bottom Ash Aggregate (IBAA).

The following techniques are undertaken outside of the building using mobile plant

- crushing of IBA/IBAA to enhance metal recovery (see further details below).
- Mixing as required by customers
- IBAA will be stored outside as it goes through the 'ageing' process for a second time.

Specific dust control measures include:

- All transport vehicles arriving and leaving Site must be fully sheeted.
- As required, dependent on weather, waste or product conditions, a water bowser fitted with a spray nozzle system will be in employed to dampen the yard, the stockpiles and hardstanding surface (see appendix 6 for water bowser specifications)
- mobile sprinkler system is available to be used on IBA deliveries
- The storage area will be managed such that potentially dusty materials would not be handled on days where wind may cause issues. Wind direction, strength, gusts need to be considered before disturbing wastes or aggregates.
- A mobile water cannon is available on site and is deployed when C&D waste is being processed, the dedicated area for this activity is on the West side of the site.

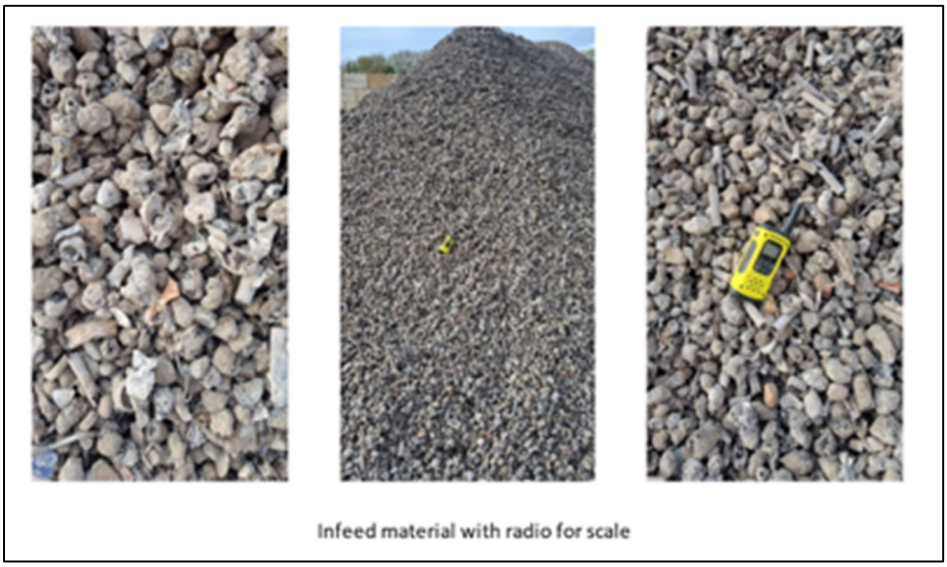
- A misting line is installed in the hopper 1 (pre trommel) during hopper loading and tipping to reduce the likelihood of dust emissions, whilst single loading of the material into the hopper will minimise agitation emissions.
- Trommel to be enclosed
- Hopper in building 2 to be cladded including a roof with a front opening to allow JCB loading as well as a misting line to reduce the likelihood of dust emissions
- building 1 & 2 are equipped with fast acting doors.
- building 1 has dedicated fogging system (appendix 10) dedicated to the stockpile kept inside
- Outdoor elements of conveyors from building 1 (to be installed with misting systems)
- All sealed road surfaces outside the Site will swept with the road sweeper, to prevent the build-up of material which may become windborne.
- A speed limit of 8 mph will be enforced where vehicles are operating around the site. Vehicles will be regularly cleaned and are maintained and serviced in accordance with legal requirements, best practice and manufacturer/supplier guidelines.
- a one way system is in operation for all vehicles exiting site, by the exit the one way system forces all vehicles to drive through the cattle grid to ensure no drag out leaves site.
- Western and northern boundary will have mobile sprinkler system installed if needed for dust suppression

Crushing of IBA/IBAA

Crushing of IBA and IBAA at the site will include ISS IBAA (see directly below for further details) and oversize IBA.

ISS IBAA comprises IBAA which has already been processed through building 1 and has a particle size range generally between 22-40mm hence comprises a coarse material. The crushing of ISS IBAA facilitates further metal recovery by freeing up metal from the IBAA/metal matrix to increase capture of the metal via magnetic separation and eddy current separation. This is consistent with the aims of BAT 36 of the Waste Incineration BAT Conclusions[1] to increase resource efficiency for the treatment of bottom ashes. A series of photographs of ISS IBAA are presented below.

[1] COMMISSION IMPLEMENTING DECISION (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration



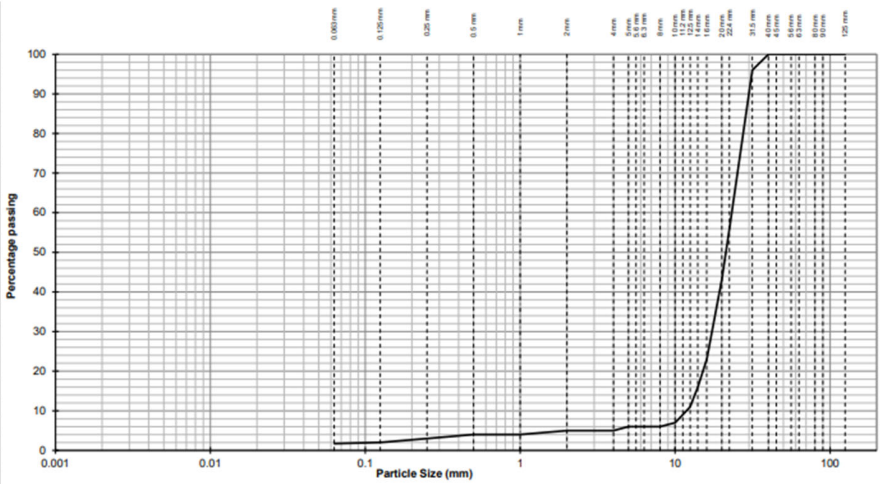
Infeed material with radio for scale

JARL collected a sample of ISS IBAA and submitted it to a UKAS Accredited laboratory for testing pursuant to BS EN 933-1:2012 *Tests for geometrical properties of aggregates. Determination of particle size. Sieving method*. The results of the particle size distribution (PSD) analysis of the ISS IBAA are provided at Appendix 12 and are discussed below. For reference, a conversion chart for the unit conversion from mm to µm is also provided below.

The data show that 93% of the ISS IBAA is larger than 10mm (ie larger than 1,000µm). Only 2% of the material passes through the 0.125mm (125µm) sieve. For context, Environment Agency technical guidance M17[2] discusses in Section 3.2 'The Importance of Particle Size' and references a standard definition of dust as 'particulate matter in the size range 1-75 µm in diameter'. The PSD data show that less than 2% of the ISS IBAA will fall in the size range 1-75µm hence the ISS IBAA is not considered to be a dusty material. The M17 guidance goes to do discuss that '*particles suspended in air can vary from the extremely small (in the nanometre size range) up to the rather sizeable (around 1mm).'* Based on this definition, the Environment Agency consider that particles around 1mm are 'rather sizeable'. The PSD data show that 96% of the ISS IBAA is larger than 1mm (ie only 4% passes this sieve size) hence the ISS IBAA is considered to be rather sizeable. This is consistent with the photographs above.

[2] Technical Guidance Note (Monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities Environment Agency Version 2 July 2013

Sieve Size (mm)	% Passing
125	100
90	100
80	100
63	100
56	100
45	100
40	100
31.5	96
22.4	56
20	43
16	23
14	16
12.5	11
11.2	9
10	7
8	6
6.3	6
5.6	6
5	6
4	5
2	5
1	4
0.5	4
0.25	3
0.125	2
0.063	1.7



Comments: Test carried out in accordance with **BS EN 933-1: 2012**

Millimeter [mm]	Micrometer [µm]
0.01 mm	10 µm
0.1 mm	100 µm
1 mm	1000 µm
2 mm	2000 µm
3 mm	3000 µm
5 mm	5000 µm
10 mm	10000 µm
20 mm	20000 µm
50 mm	50000 µm
100 mm	100000 µm
1000 mm	1000000 µm

ISS IBAA will be crushed prior to further processing (screening, metal recovery etc). The crusher will be employed on a campaign basis. The maximum annual quantity of ISS IBAA for crushing will be less than 10,000 tonnes. Based a crushing rate of 250 tonnes per day, it is anticipated that the crusher will be employed on no more than 40 days per year. This activity is undertaken in the yard, outside of building 1. Further details of the activity are presented in the BAT assessment presented with the application for V002 of the permit. The BAT assessment concludes that based on the risk posed by the activity and the implemented control measures, the crushing activity does not need to be undertaken within an enclosed building. The control measures and monitoring (to confirm the effectiveness of the control measures) include the general site wide measures included in this dust management plan and the following:

- Dust suppression will be in place either external to the crusher or via spray bars built into the crusher to minimise dust formation during the crushing process
- A mobile water cannon is available to be used when the crusher is mobilised
- Undertaking of the activity at a location that takes into consideration the prevailing wind direction
- A commitment to postpone or cease activities, such as crushing, if the meteorological conditions (high winds) preclude effective particulate matter control.

- Crushing on a campaign (non continuous) basis.
- Protection provided by the perimeter lego block wall
- Visual monitoring by site personnel during the crushing activity to confirm that unacceptable emissions of visible dust are not being generated and to inform any additional suppression which may be required.
- Continuous monitoring at the site for Particulate Matter PM10 at fixed locations. As the monitoring is continuous, records can be compared to the time periods during which crushing campaigns are being undertaken and the data can be reviewed to determine whether the emissions from the crushing activity are significant in the context of the overall site operations.

In summary, IBA within the Incoming IBA Storage and Quarantine Area is unlikely to generate dust other than during the loading procedure prior to transfer, and during the transfer process. The dust suppression systems (mentioned above) include dust dampening at the dust source and not at the site boundary. The latter water system uses harvested rainwater, treated water (in wedge pit) and mains water (as a last resort).

2.5 C&D waste acceptance and processing

C&D waste is accepted onto site, in accordance the site's waste acceptance procedures, the material is screened and stored in a designated stockpile. Further blending with other materials (such as, recycled aggregate, virgin material, etc) might be necessary as to comply with the customers' requirements.
C&D processing and handling can potentially create dust, depending on the technology used and procedures in place. At this facility C&D processing will comprise, crushing, screening and blending with IBAA and the following mitigation measures will be adopted:

- Mobile water cannon to be used when crusher and/or screener is mobilized for C&D waste
- Operation within the designated areas only for C&D waste (in between the West side boundary and the left side of building 1) protected by the high soil bank (6 meters high) on the west side. max height for the stockpile of materials of C&D, IBAA and virgin aggregates will be 5.5 meters.
- Visual monitoring by trained site staff of operations while crusher and/or screener is in operation (this is required to ensure good performance of the crusher and screener and deploy dust controls available on site as and when needed, see 3.4 Sources and Control of Fugitive Dust/Particulate Emissions section of the DMP for more detail).
- Dust suppression will be in place either external to the crusher or via spray bars built into the crusher to minimise dust formation during the crushing process
- mobile dust monitoring equipment PM10 and PM2.5 to be used by site staff to quantify dust levels (see appendix 8).
- 2 dust monitoring stations on site monitoring the dust particles, providing reading of levels every 15 min intervals.

2.6 All other wastes

All processed materials will be stored outside and exposed to the elements. The material is stored as described below:

- Recovered aluminium stored in big bags
- Recovered heavies stored in big bags (industrial heavy duty carrier bags hold 1ton)
- Non ferrous metals >9mm is stored in stockpiles loose in bays and transferred off site using sheeted lorries for clients
- Ferrous material: stockpiled loosely stored in bays and sold to customers
- Stainless material: loosely stored in bays and sold to customers
- all remaining material is stockpiled in the IBAA pile (only IBAA)

All finished IBAA will be used as aggregate; ferrous and non-ferrous metals will be sent for recycling at an appropriate facility.

Any additional material unsuitable for recovery (for example a minimal contamination with C&D waste) will be sent to an appropriately authorised facility. Site generated waste: plastics, cardboard, wood, big bags, are segregated on site and are directed to other recycling facilities.

All external processes are monitored, with the feed materials being dampened down to ensure dust emissions are controlled to a minimum.

Portable dust suppression units will be deployed to provide additional dust control if internal dust levels triggers are reached 75 µg/m^3 or weather station triggers levels are reached (automated email is sent to all relevant site staff (site manager, yard supervisor, compliance team).

Main stockpiles of recycled aggregates are to be stored within the bunded area in the North West corner of the site protected from SW prevailing winds, also protecting from the SE corner there is the IBA lego block wall of 5.6 m high which will be increased to 7.2m following issue of variation V002 of the permit. Runoff from rainfall and / or dust suppression (mobile sprinklers, water bowser spraying stockpiles) will keep the material on the North facade of the pile damp, as well as aid the ageing process.

The geography of the site and the distance from local sensitive receptors favourably reduces the possibility of causing a nuisance, when applying the controls stated in this DMP, as described in section 3.3 Sensitive receptors.

3.0 Dust and Particulate (PM_{10}) Management Plan

3.1 Responsibility for implementation of the DMP

This DMP forms part of the organization EMS bespoke for Saxon Brickworks, IBA recycling facility. The implementation of the EMS is the responsibility of the site manager (based on site) and all staff will be trained with toolbox talks in the requirements, so they may undertake their duties in a productive, safe and environmentally aware manner.

The DMP is reviewed at least yearly and/or following any changes to operational procedures or equipment, an accident (with root cause identified as related to inadequacy of the DMP), Health & Safety or environmental concerns or legislative requirements.

Following review, the changes (and an update version of the EMS) will be communicated and provided to all staff by means of direct communication, email, notice board or toolbox talk.

The site manager is responsible for ensuring this DMP and that measures and procedures are followed as appropriate to the site operations and current weather conditions. In certain adverse weather conditions (high winds) visual monitoring will be more intensive to ensure site operations don't give rise to fugitive emissions or site operations could be held to a halt.

Adverse weather conditions are considered to be those which could lead to an increased potential for fugitive emissions to be released beyond the site boundary.

An example could be dry and hot weather combined with strong winds - where even with reinforced mitigation measures, there would still be a high potential for fugitive emissions to be released beyond the site boundary.

The site manager will be responsible for ensuring up to date records are kept of monitoring and mitigation measures in place during such events (daily checks, dust / weather station monitoring data, water bowser / cannon use, road sweeper activity).

All such records will be retained in the site office for inspection as required.

All site operatives will be trained (with tool box talks) on the most up to date DMP and required to take action as and when required. Site staff will also be required to take preventative action to avoid dust clouds by clearing any spillages of materials, maintaining dust suppression equipment in good working order, repair of defective dust suppression equipment immediately, maintaining roads clean and in good condition and mud free at all times.

Contractors working on site will be made aware of the provision of the dust management plan and be required to comply with the relevant provisions as appropriate to any work they are undertaking on site.

3.2 Local area information

Each local authority in the UK, since 1997 has been carrying out assessments focusing on the air quality in their area with the aim if ensuring the national air quality objectives are achieved throughout the UK by the defined deadlines. The Air Quality Management Areas (AQMA) have been consulted by data made available by DEFRA, on their website https://uk-air.defra.gov.uk/aqma/list

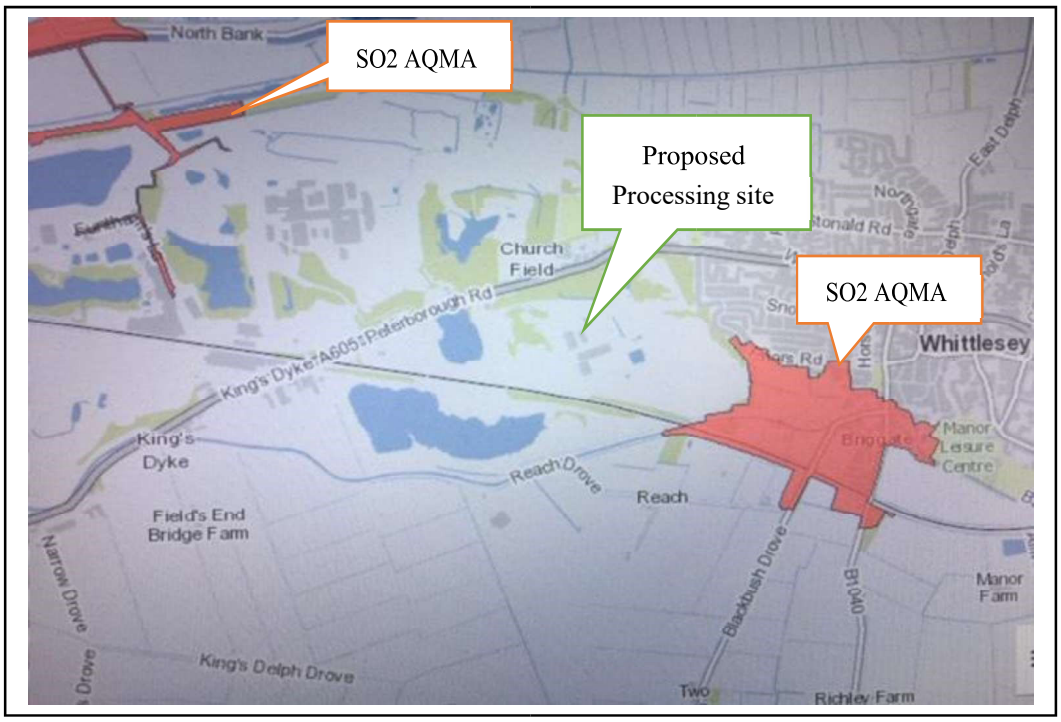
Table 1 https://uk-air.defra.gov.uk/aqma/list

Local Authority	AQMA Name	Pollutants	Date Declared	Date Amended	Date Revoked
Peterborough Council	AQMA No.1	Sulphur dioxide SO_2	01/05/2007	-	

site will prioritize using ultra low sulphur levels to avoid contributing to the AQMA when possible.

The Site is not located in an Air Quality Management Area (AQMA). See Map 2 with the location of the AQMA in the vicinity of the site

MAP 2 - Local AQMA SO_2



3.3 Sensitive Receptors

Human sensitive receptors include, but are not limited to, hospitals, schools, childcare facilities, elderly housing and convalescent facilities. These are areas where the occupants are deemed to be more susceptible to the adverse effects of exposure to high levels of dust and particulates. Sensitive receptors within 1 Km of the site are deemed areas that are, potentially at risk from fugitive emissions.

Environmental sensitive receptors include, but are not limited to, lakes, rivers, water courses, flora, and fauna.

In table 2 below, key Potential Sensitive receptors have been identified, the list is not exhaustive, but we consider the list below to represent the area to be potentially impacted by the site activities.

Table 2 Potential sensitive receptors in the vicinity of the Site.

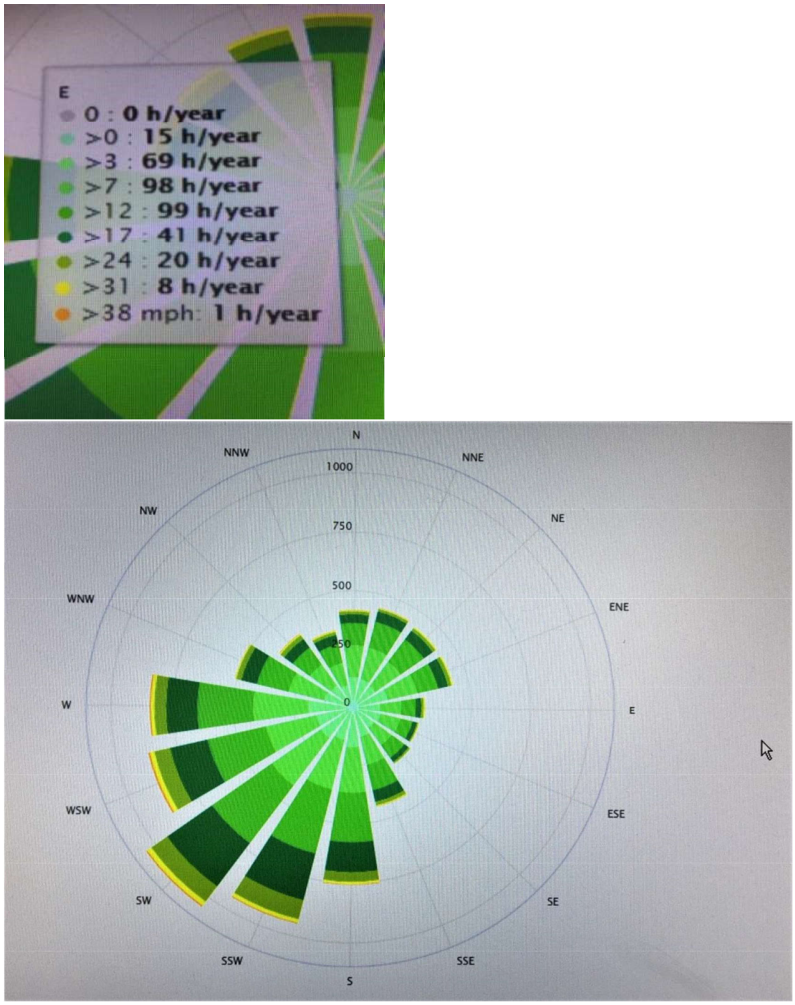
Potential Sensitive receptor	Direction	Distance (approx.)
Park lane primary and nursery school	East	1000 m
Priors road	East	340 m
Railway Track	South	260 m
Kings Dyke	South	600 m
Kings Dyke Nature Reserve	North west	600 m
A605	North	190 m
Residential properties in A605	North	200 m
Whittlesey Junior football club	North	570 m

Table 3 Potential receptors that have been discounted due to landscape or distance.

Receptors Considered	Direction	Distance (approx.) 1Km
Buildbase Whittlesey	West	1Km +

The local area is a mix of major industrial sites, carrying out significant operations along with housing, open fields, and a nature reserve.

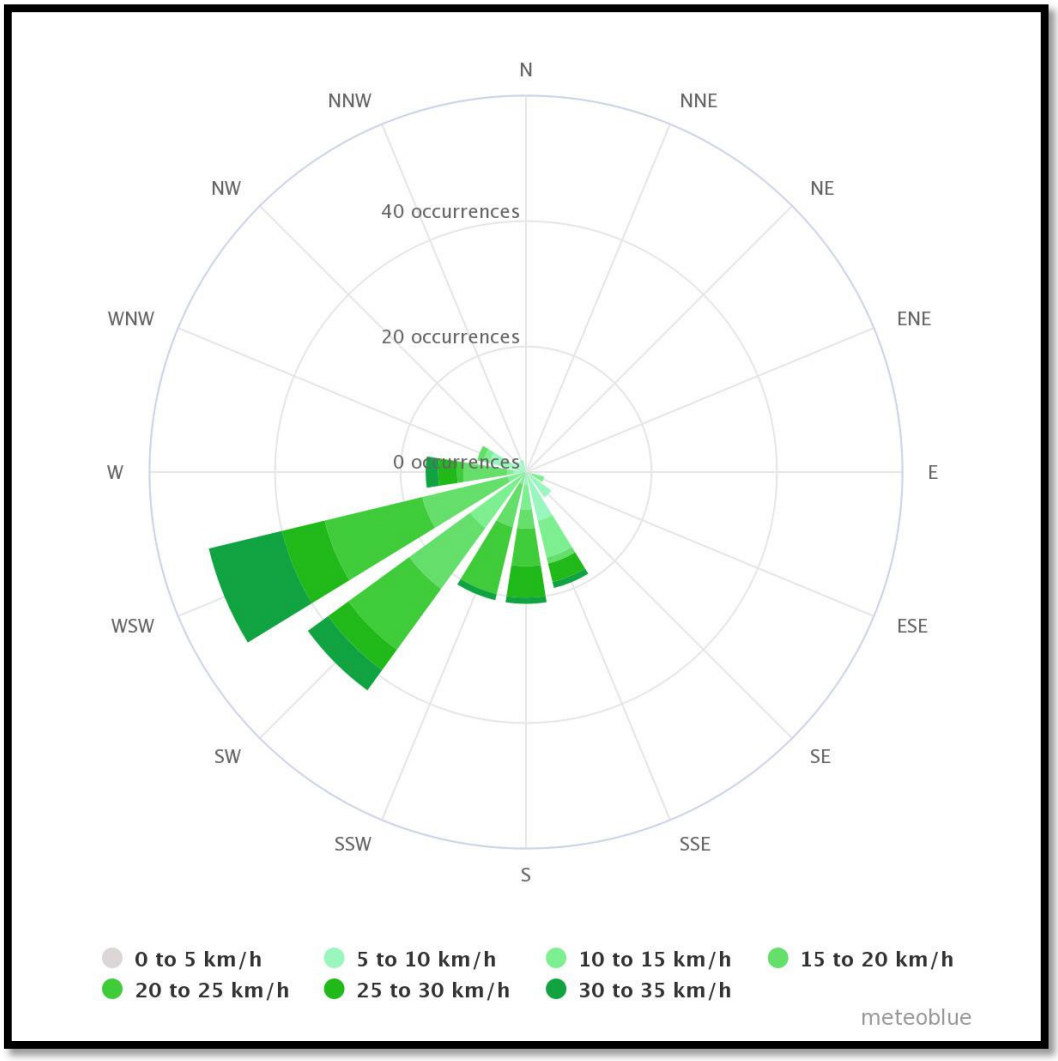
Prevailing southwest winds are expected as visible from wind rose below. Data was collected from the website meteoblue.com see map 4 with data previously submitted.



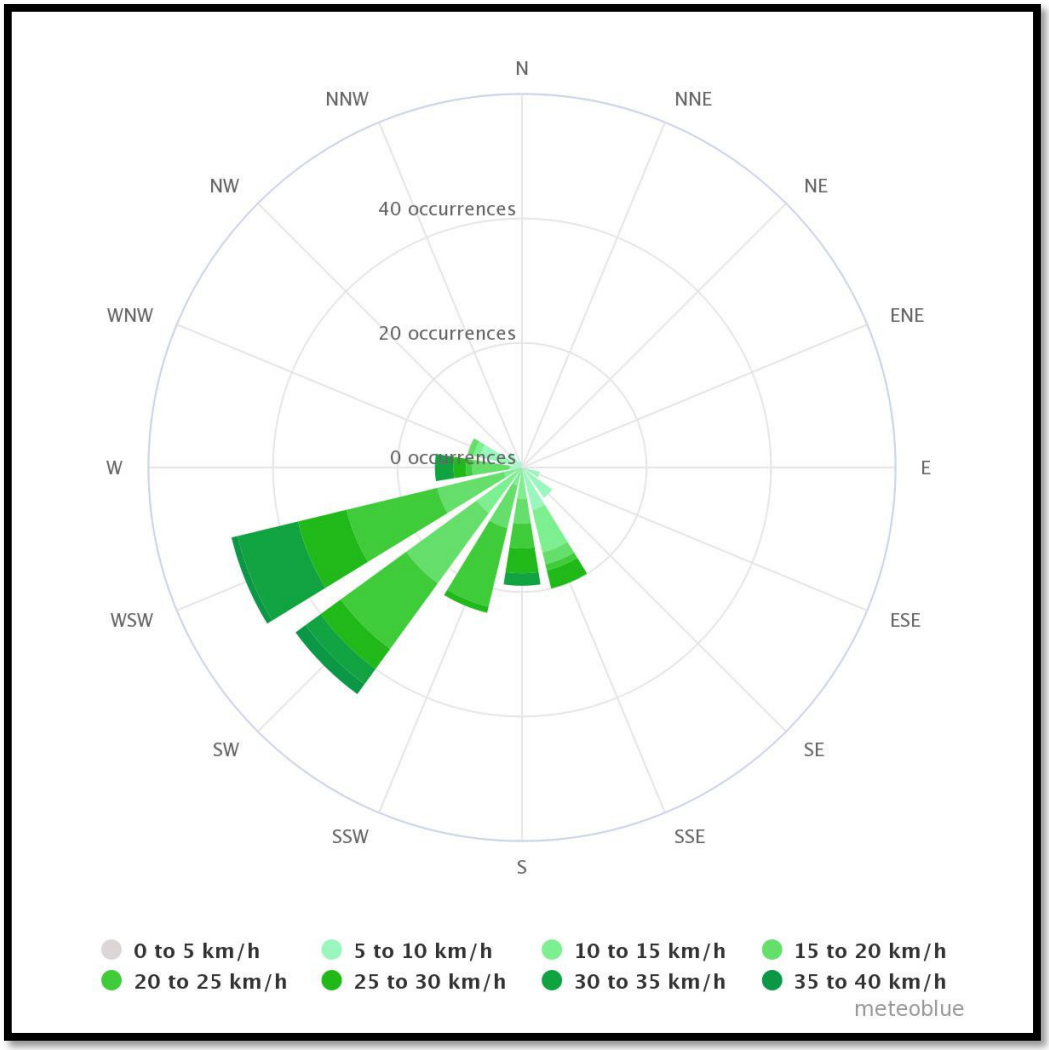
MAP 4 - Peterborough Area Wind Rose
https://www.meteoblue.com/en/weather/archive/windrose/peterborough_unitedkingdom_2640354

The wind rose displays the distribution where the wind is coming from and with which intensity. For thoroughness wind rose data was collated for 4th-11th of August 2021 for the weather station in Peterborough (52.57°N 0.25°W) as well as Whittlesey (52.56°N 0.13°W) weather station. Results are below see map 5.

Map 5: Peterborough (52.57°N 0.25°W) weather station Wind Rose.
https://www.meteoblue.com/en/weather/archive/windrose/peterborough_united-kingdom_2640354



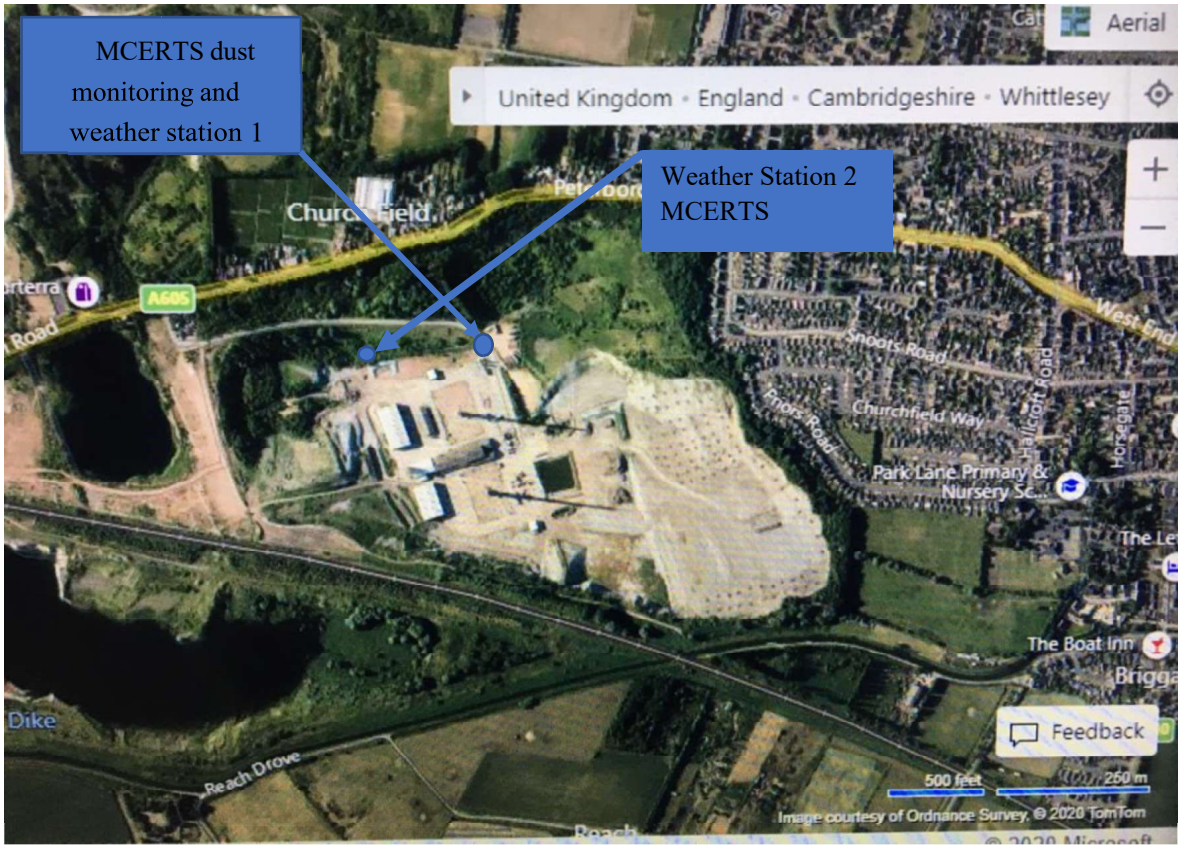
Map 6: Whittlesey (52.56°N 0.13°W) weather station Wind Rose.
https://www.meteoblue.com/en/weather/archive/windrose/whittlesey_united-kingdom_2634010



Reference to be made to Appendix 3 with the location of weather station used for the prevailing winds and its proximity to site

Considering the locality of the potential sensitive receptors and the prevailing winds 2 (two) Particulate Matter PM10 monitoring devices including weather stations are installed on the site boundary, see map 3 below. The Environment Agency confirmed in EPR Compliance Assessment Report (CAR) ID DP3131NM/0481953 dated 27 November 2023 that the locations of the devices are appropriate. In the CAR form, the Environment Agency confirmed that Improvement Programme Requirements IC1 and IC2 in relation to particulate matter monitoring are completed and approved.

MAP 7: Weather station 1 & 2 and Dust Monitoring station



Weather stations are to be installed well away from large structures to avoid any aerodynamic effects they impose; distance should be at least 5 meters.
With this into account:

- Weather station 1 is installed by the weighbridge
- Weather station 2 was originally installed in between building 2 and the lego wall by the IBA slab and was moved on 17 October 2022, with approval from the Environment Agency (see above CAR), to the location shown above

The permitted area is presented with a significant degree of protection by the surrounding topography.

In addition to west high soil bank, the northern part of the site is surrounded by a heavy curtain of trees, which will act to prevent windblown dust leaving the site in the absence of on-site mitigation.

There are a number of potentially dust generating sources on site - as detailed in Section 3.4
For dust to become airborne, an energy input is required. The particles are then dispersed by suspension in moving air. The area into which the dust can disperse is directly affected by particle size and wind speed.

Coarse particles have much faster settling rates than smaller particles and will therefore settle out generally closer to the source, whereas finer particulate matter may travel greater distances. Based on information published by DETR large particles (>30µm) mostly deposit within 100m of the source, intermediate-sized particles (10µm to 30µm) are likely to travel up to 200m to 500m and smaller particles (<10µm) can travel up to 1km from the source, although very small particles can travel much further.

Dust concentrations will decrease rapidly with distance from the source, due to factors such as dispersion and dilution.

Page 18 of M17 (Technical Guidance Note (Monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities, version 2 2013) states:
The zone of influence will vary from one waste facility to another and will depend upon factors such as the source emission strength, prevailing wind direction and terrain: former planning guidance for surface minerals sites stated "residents can potentially be affected by dust up to 1 km from the source, although concerns about dust are most likely to be experienced near to dust sources, generally within 100 m, depending on site characteristics and in the absence of appropriate mitigation"; and for construction and demolition sites the IAQM guidance (Institute of Air Quality Management, Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (DRAFT), March 2012) has set a default cut-off distance for dust effects of 350m.

Taking this into account the largest proportion of potentially dust emission impacts are therefore likely to occur within 500m surrounding the site.

With reference to Table 2, it can be seen that 3 of the receptors identified are within 500m of the site. These are discussed individually below.

The A605 is surrounded by a heavy curtain of trees, and submitted to heavy traffic on a day-to-day basis. Typically, site exhaust emissions are scoped out as low risk.

The sites design has taken into account the location of sensitive receptors on the East (Priors road) which are also facing in the prevailing winds. To decrease the potential for dust to escape towards the East, the sites boundary to the East is built with a 5,6m height lego block wall (see appendix 1 with site layout), in a U shaped structure protecting the material from the prevailing

winds and prevent wind whipping of the particulates. The lego wall will be increased to 7.2m following issue of variation V002 of the permit. Consistent with EA guidance Control and monitor emissions for your environmental permit a free board of at least 500mm will be always kept to prevent wind lifting particles.

Towards the South (Railway track) of the site's boundary operations include moving IBA to the hopper/Trommel, these operations are also protected by a lego wall to prevent dust escaping when the material is handled by the front loading shovel.

The two dust monitoring stations monitor the dust levels focusing on vehicle movement (weighbridge) and the East side of the site.

The potential for receptors to the east of the site to be adversely affected by dust is mitigated in part by the existing line of thick vegetation in between the site and the receptors.

Dust control will be heavily concentrated on the preventative measures to minimize the potential for dust emissions beyond the site boundary. In dry windy conditions it can become difficult to maintain effective dust controls. As a guide, strong winds are considered to exist when the on site wind sock is nearing full extension. In light of experience on other sites showing this to generally start at around 15-20mph, strong winds are considered therefore to start on this site at 17mph.

When local wind speeds result in the on site wind sock nearing full, all site operations that have the potential to give rise to fugitive dust emissions beyond the site boundaries will be suspended. 17 mph will be included as an alarm into the relevant dust monitoring station.

3.4 Sources and Control of Fugitive Dust/Particulate Emissions

The expected activities which could generate dust arising from the activities on site listed below:

- Tipping incoming waste (only allowed in 2 location IBA bay surrounded by 7.2m lego wall with dust controls in place, and the C&D waste which is only allowed in the west side of the boundary with specific dust controls in place)
- Movement and transfer of waste on site (all material (IN) being tipped and taken of site with finished material (OUT) is transported with automatic sheeting, in all vehicles, the waste material being moved with a bucket on site, the bucket will be kept with free board of 20cm to prevent wind whipping. All loading and tipping of material has appropriate dust mitigation & suppression techniques being applied too.
- Processing activities of the waste material (C&D waste has limited and defined location approved with specific dust controls in place, building 1 &2 are enclosed with dedicated dust controls, IBA/IBAA crushing is limited to a campaign (non-continuous) basis and is undertaken at a location that takes into consideration the prevailing wind direction, with specific dust controls in place (see section 2.4)

- Dust from wheels of vehicles
- Stockpiling of waste
- Loading material into vehicles for transport off site
- Dust generated from unpaved and little used parts of the site

The methodology for this facility for preventing dust emissions on site are a combination of daily monitoring, dust containment where required (high winds on particularly hot&dry days it can be difficult to contain the dust because when the dust dries out it can became a source of dust again) combined with dust suppression systems. These are to be deployed as and when needed.

Mitigation measures to be implemented to suppress dust:

- The use of water to damp down haul roads and operational areas, for which a water bowser and water supply will be always maintained on site. Water supply for dust suppression will be primarily treated (coagulant dosing, followed by a cyclone and a membrane system) using water from the wedge pit, if not available then main water supply.
- drive thru cattle grid with permanently flooded area to clean the wheels of the vehicles before exiting site.
- The maintenance of all running surfaces for mobile plant and road vehicles as and when necessary and in aligned with the appropriates standards (eg CIRIA Containment systems for the prevention of pollution: Secondary, tertiary and other measures for industrial and commercial premises (C736; 2014). guidelines) to ensure that they are dust and mud free.
- An anti-idling policy is enforced on site at all times
- A speed limit of 10 mile per hour will be enforced.
- Vehicles will be regularly cleaned during dry months and are and are maintained and serviced in accordance with best practice and manufacturers / supplier's guidelines.
- The drop heights of material onto the ground and plant hoppers have been minimized at engineering phase, including conveyor discharge heads (all less than 1m).
- Training for yellow plant drivers in relevant SOPs & in the DMP to reference the drop heigh of material needs to be as minimal as possible to minimize the dust potential.
- The use of damping down systems on treatment plant including crushers and screens whenever the plant is in operation.
- Use water bowser to damp down stockpiles using treated water from storage tanks.
- Use of road sweeper for good housekeeping
- The following restrictions will apply to C&D waste on site:
    - mobile Water cannon (see appendix 9) to be used when crusher and/or screener is mobilized for C&D waste
    - Designated areas only for C&D waste (southwest side on the left side of building one)

- During dry weather a water bowser fitted with a rain gun attachment in the back to allow efficient water usage and spray the water up to 70m high, will be in operation to dampen the Incoming IBA Storage and Quarantine Area, the existing yard, the stockpiles, and surface as required. The water Bowser is a portable unit that is smaller than the front-end loader and therefore can access the required access roads, tracks with ease. The spray can be altered to spray as required dependent on the reach or spread of the water coverage required.
- The sealed surface of the Incoming IBA Storage and Quarantine Area will be swept with the road sweeper, if small deposits of material are identified, to prevent a build-up of material that may become windborne. Any bigger spillages will be picked up by the JCB.
- All plant operating within the Incoming IBA Storage and Quarantine Area will be equipped with upward facing exhausts to reduce the risk of the dust becoming airborne.

In the event of the failure of all the mitigation methods detailed above to control airborne emissions the operations on site will cease until such time as dust is longer a problem.

3.4 Enclosure of waste processing & storage areas

The processing of IBA starts by the Trommel (tucked away by building 1 protected from prevailing winds). The processing of IBA consists of separating the material by size fraction, using magnets, using eddy current separators, screeners, and milling. The recovery of IBA initially starts in Building 1 and after drying (3 to 6 days) it continues its processing in building 2.

Building 1 is fully enclosed. All conveyors are covered to minimize the potential of dust inside the building. The IBA must be damp for the ageing/weathering process to occur and allow efficient metal recovery. Site staff will monitor and keep the moisture content levels between 15 and 20%, this ensures the IBA is suitable for processing and also prevents dust release.

Throughout the process in building 1 the moisture content drops to 10%. There are 5 streams of material being handled inside building 1, remaining streams are dropped outside within dedicated bays, the chutes are lower than the surrounding lego block walls (<700mm) protecting the material from the wind.

See 3D layout of building 1 below

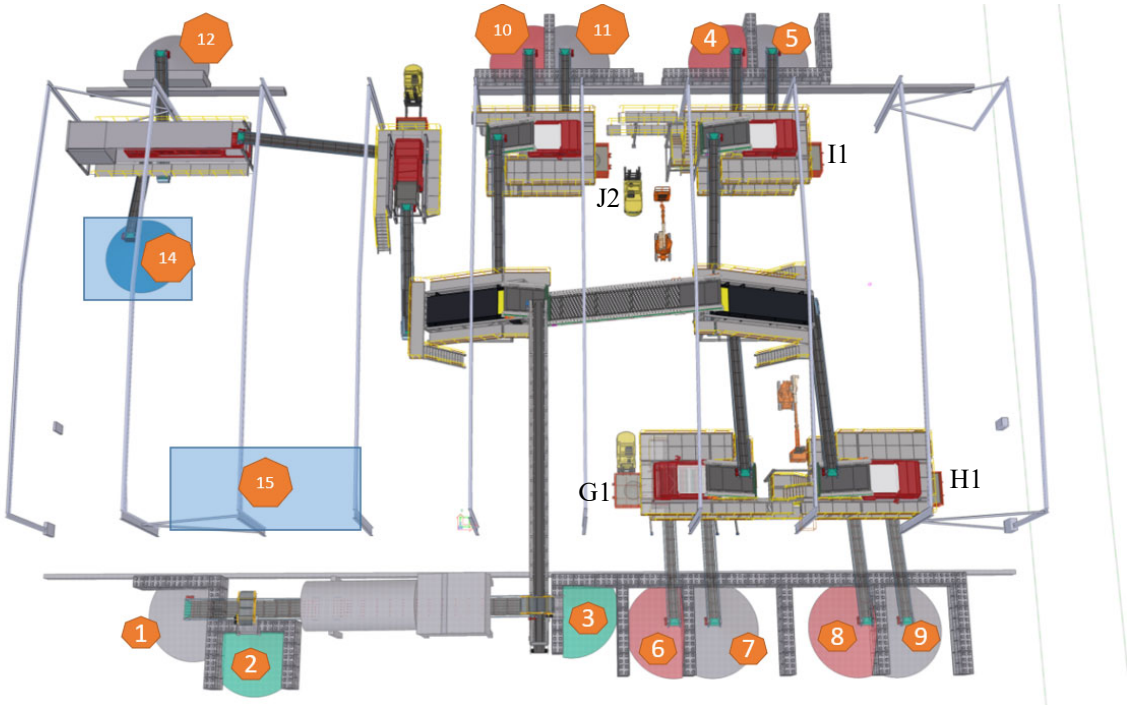


Table 4 identifies the material in each bays with lego wall height (all outdoors).

TRS STOCK PILES (External)	MATERIAL	Bay Internals (L) (m)	Bay Internals (W) Bucket Width 3.17m	Bay Internals (H) (m)
Bay 1	>40mm IBA	4.05	3.375	3.5
Bay 2	>40mm Ferrous	4.05	4	3.5
	0-40mm IBA POST Trommel (Infeed)			
Bay 3	0-40mm Ferrous (PRE TRS)	4	6.4	2.4
Bay 4	0-2mm Ferritic Ash (Magnetic Slag)	4	4.8	4
Bay 5	0-2mm Inert (IBAA)	5.6	6.4	4
Bay 6	2-6mm Ferritic ash (Magnetic Slag)	2.4	4.8	4
Bay 7	2-6mm Inert (IBAA)	5.6	6.4	4
Bay 8	6-12mm Ferritic ash (Magnetic Slag)	2.4	4.8	4
Bay 9	6-12mm (IBAA)	4	6.4	4
Bay 10	12-22mm Ferritic ash (Magnetic Slag)	2.4	4.8	4
Bay 11	12-22mm (IBAA)	4	6.4	4
Bay 12	22-40mm (IBAA)	5.6	6.4	4
TRS 6 (Inside Building Bay 14)	22-40mm Raw Stainless Concentrate	4.8	4.8	4
TRS 7 (Inside Building Bay 15)	0-12mm NF Mix	4.8	12.8	2.4

The potential for dust release is inherently associated with the fraction size that make up the stockpile, inside building 1 we have the streams below:

- G1: 2 – 6 mm
- H1: 6-12mm
- I1: 0-2 mm

- J2: 12-22mm
- 14: 22-40mm Raw Stainless concentrate

For potential dust purposes the fractions that have a higher potential to generate dust are I1 and G1 with sizes of 2 – 6 mm and I1: 0-2 mm, respectively.

These materials are collected in self tipping skips with a volume size of 1-2 m^3. The skips will be exchanged and emptied when filled with $1m^3$ of material to allow free board of the skip and minimize dust whipping from the vehicle movement. This material is around 10% of moisture content.

The materials (I1 & G1) are tipped inside building 1 (in bay 15) and dried between 3 to 6 days before being moved to building 2. The moisture content will drop to 6%. Higher moisture content in building 2 will cause blockages and jeopardize the safe operation of the equipment.

The stockpile of material in building 1 (see drawing with numbers 14&15) has a potential for dust when disturbed (yellow plant moving the material) so a fogging curtain will be installed to prevent emissions from point 15, and in the stainless steel stockpile (no 14) a fogging dedicated line will be installed by the end point of the conveyor.

See below the list of equipment operating in building 1 with the dedicated dust mitigation measures applied.

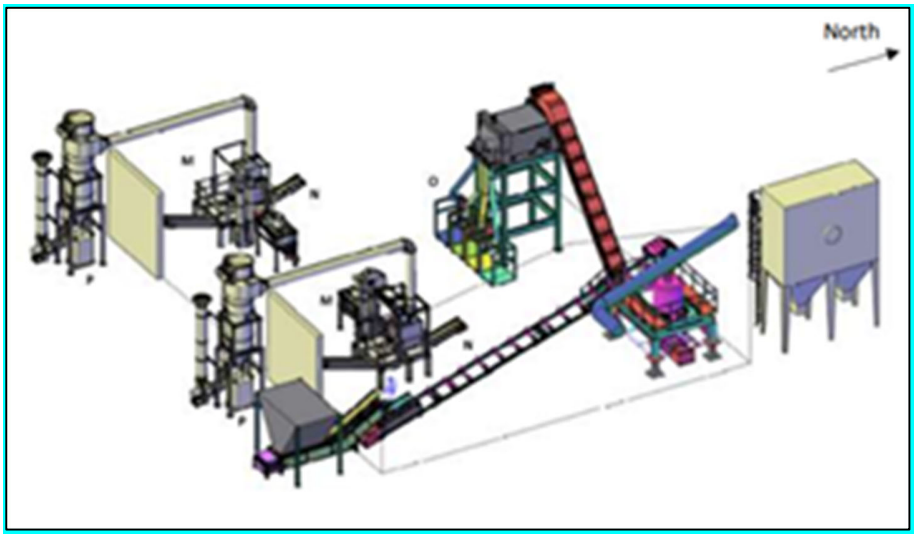
Table 5: list of equipment in building 1 with associated size of material per equipment and its dust potential evaluated against dust mitigation measures applied.

Type	Description	Machine	Size of material	Dust potential
S3A	**Course sieve**	Reception conveyor	12-40mm	Low (Chute, Drop Height ~0.6m) Big size particles separated at the beginning of the process with high Moisture content
		Collecting conveyor 1	22-40mm	Low (Covered, Drop Height ~0.3m)
		Collecting conveyor 2	12-22mm	Low (Covered, Drop Height ~0.3m)
		Collecting conveyor 3	0-12mm	Low (Covered, Drop Height ~0.3m)
S3B	**Fine sieve**	Reception conveyor	0-12mm	Low (Chute, Drop Height ~0.6m) Enclosed within the unit
		Collecting conveyor 1	0-2mm	Low (Covered, Drop Height ~0.3m)
		Collecting conveyor 2	2-6mm	Low (Covered, Drop Height ~0.3m)
		Collecting conveyor 3	6-12mm	Low (Covered, Drop Height ~0.3m)
R3A-D	**Double ECS**	Sieve drop onto conveyor	0-2/2-6/6-12/12-22	V Low (Sealed) Drop Height ~0.5m)
		Transport conveyor	0-2/2-6/6-12/12-22	Low (Covered)
		Reception conveyor	0-2/2-6/6-12/12-22	V Low (Chute, Drop Height 0.6m) Enclosed within the unit
		Eddy Collection Conveyor	0-2/2-6/6-12/12-22	Low (Chute, Drop Height 0.35m)
		Deflector Plate Split	0-2/2-6/6-12/12-22	V low (Covered)
		IBAA (NF) transport chute to skip	0-2/2-6/6-12/12-22	Low (Chute) Drop Height ~0.50m)
		IBAA (M/Slag) conveyor to outside	0-2/2-6/6-12/12-22	Low (Covered) V Low (Chute, Drop Height 0.25m)
		IBAA (M/Slag) transport conveyor to outside	0-2/2-6/6-12/12-22	Low (Covered) V Low (Chute, Drop Height 0.25m)
		Reception conveyor to lower Eddy	0-2/2-6/6-12/12-22	V Low (Covered)

R1A	**Single ECS**	Sieve drop onto conveyor	22-40mm	Low (Covered) Drop Height ~0.65m) Big size particles separated at the beginning of the process with high Moisture content
		Transport conveyor to vibrating plate	22-40mm	Low (Covered), V Low (Chute, Drop Height 0.25m)
		Vibrating Plate	22-40mm	Low (Covered)
		Eddy Collection Conveyor	22-40mm	Low (Covered)
		Deflector Plate Split	22-40mm	Low (Covered)
		IBAA (Slag) conveyor drop	22-40mm	V low (Sealed) Drop Height ~0.5m)
		Transport conveyor to SS (IBAA (Slag)	22-40mm	Low (Covered)
		IBAA (NF) transport conveyor to skip	22-40mm	Low (Chute) Drop Height ~0.80m) Big size particles separated at the beginning of the process with high Moisture content
R5A	**Sensor separator**	Reception conveyor drop	22-40mm	V Low (Chute) Drop Height ~0.25m)
		Vibrating Plate	22-40mm	Low (Covered)
		SS Conveyor	22-40mm	Low (Covered) Drop Height ~0.15m)
		Air Pulse Separation conveyor	22-40mm	Low (Covered)
		IBAA transport conveyor to outside	22-40mm	Low (Covered) V Low (Chute, Drop Height 0.25m)
		IBAA (Stainless) transport conveyor to internal bay	22-40mm	Low (Covered) V Low (Chute, Drop Height 0.25m)

Further processing/polishing of the material in Building 2 requires the moisture content to be at 6%, this will allow optimal performance of the equipment at Building 2. Not only building 2 is fully enclosed but all equipment installed and operating inside is fully enclosed as well.

See 3D layout of building 2 below



See table 6 below with the dedicated dust systems for each item.

Table 6: list of equipment in building 2 with its associated dust potential

BUILDING 2		
Description	**Machine**	**Dust potential**
air extraction system	2x extraction systems	low, dedicated extraction system to collect dust.
infeed	infeed hooper	Covered & material to be dropped maximum at 1m from the bottom to minimize drop height
sieve reduction	Mill	Low - as unit is fully enclosed
screener	sieve	Low - as unit is fully enclosed
screener	2x separators	Low - as unit is fully enclosed
transport the material	6x conveyors	Low - as unit is fully enclosed

Table 7: Source-Pathway-Receptor Routes (from DMP template provided by the EA)

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	Ground / Surface water	Visual soiling, also consequent resuspension as airborne particulates	The site has a road sweeper on hire 2x a week
Debris	falling off lorries	Atmosphere Humans including: workers / visitors; workers on adjacent premises; local residents; intermittent presence on pedestrian routes / roadways surrounding the site/ * -Sensitive receptors identified	Visual soiling, also consequent resuspension as airborne particulates	All lorries are covered (automatic sheeting mandatory to enter the facilities
Tipping, storage, crushing, screening and sorting of wastes in the open	Atmospheric dispersion	Atmosphere Humans including: workers / visitors; workers on adjacent premises; local residents; intermittent presence on pedestrian routes / roadways surrounding the site /* -Sensitive receptors identified	Visual soiling and airborne particulates	Minimise source strength by means of low drop heights (up to 1m of the edge of the hopper), profiling and shielding of piles from wind whipping, positioning sources away from receptors. Also wetting of certain materials to minimize the potential dust release. Dust suppression external to or built into crusher/screener. Restricting processing activity to a location taking into consideration prevailing wind. Water bowser used to keep surfaces dampen, attachment of rain gun which can dampen the stockpiles up to 70meters
Tipping, storage and sorting of waste inside buildings	Escape from buildings and subsequent atmospheric dispersion	Atmosphere Humans including: workers / visitors; workers on adjacent premises; Annoying	Visual soiling and airborne particulates	Enclosed building, with covered conveyors doors away from most sensitive receptors. moisture content is at 20% which minimise potential for dust release, drop of material to skips minimized
Vehicle exhaust emissions	Atmospheric dispersion	Atmosphere Humans including: workers / visitors; workers on adjacent premises; local residents; intermittent presence on pedestrian routes / roadways surrounding the site *	Airborne particulates	Implementation of regulatory controls identified in "In Service Exhaust Emissions Standards for Road Vehicles (19th edition, 2017)", "Control of Diesel Engine Exhaust Emissions in the Workplace", (3rd edition, 2012) and "Non-Exhaust Emissions from Road Traffic" (DEFRA 2019).
Non road going machinery	Atmospheric dispersion	Atmosphere Contained on site	Airborne particulates	Implementation of regulatory controls and best-practice (BAT-AELs for non haz waste august 2018, Non-hazardous and inert waste: appropriate measures for

exhaust emissions				permitted facilities July 2021) measures to minimise source strength

*Potential sensitive receptors identified as identified in table 2

Table 8: Measures that will be used on site to control dust/particulates (PM_{10}) and other emissions

Preventative Measures	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Enclosure within a building	Creating a solid barrier between the source of dust and particulates and the receptors	It has been considered and implemented for this site. Procedures are in place to manage the building and its integrity.	Will this be used all the time the site is operational? YES, activities in building 1 & 2 described in section 3.4. See details in section 2.4 in relation to the control measures for the crushing of IBA/IBAA outside of an enclosed building.
Negative pressure extraction	Within enclosed buildings	Low odour potential for IBA material, the organic content is <5% because the material has been incinerated, so the risk of the material to rot is low. For dust purposes the use of negative pressure extraction is considered not to be needed in this situation.	Will this be used all the time the site is operational? NO, all conveyors transporting material are covered, moisture content is 20% dropping to 10% minimizing the potential for dust release, drop height of material are <500mm into skips or shuts in external bays Building 2 all equipment is fully enclosed and has dedicated 3 extractions systems incorporated in the processing lines Extraction system doesn't have any emission points, it captures the dust and drops it into a bag
Abatement Measures	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Dust Extraction Systems	Dedicated extractions system are in building 2 to ensure there is no dust release from the process	Very effective for dust collection. It is clearly in the site management system and implemented as appropriate measures.	Will this be used all the time the site is operational? Yes, building 2 has 3 dedicated extractions systems incorporated in the processing equipment, more detailed provided in section 3.4 of the DMP
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors may reduce receptor exposure, provided that emissions from the source are not dispersed over significant distances.	combination with other measures to reduce dust and particulate generation such as misting systems and mobile water suppression systems have been applied.	This will be used all the time the site is operational the location of the sensitive receptors has been taken into account in determining the best location on site for vehicle movement and all other activities.

Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Procurement policy to only purchase clean burn road vehicles and non-road going mobile machinery. Enforcement of a speed limit 10mph will reduce re-suspension of particulates by vehicle wheels.	Easy to implement as part of good practice. All site personnel know what to do Should be identified clearly in the site management system and implemented as appropriate measures. Speed limit 10mph	Will this be used all the time that the site is operational? YES, we apply this policy staff/visitors and contractors trained on relevant policies and procedures.
Abatement Measures	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Minimising drop heights for waste. Use of enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Enclosing processes will further reduce dispersion.	This has been implemented Best practise measures are to be always employed	Will this be used all the time that the site is operational? yes this is applied throughout the site, in the chutes of the conveyors, in hoppers and when loading vehicles. Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? No, SOP are in place to ensure operators are trained
Good housekeeping	Have a consistent, housekeeping schedule that is supported by management, this ensures the site is regularly checked and issues remedied to prevent and remove dust and particulate build up. Regular housekeeping regime will consist of daily damping with the water bowser. Visual checks will be undertaken as detailed in Section 4.6. Site will be swept by road sweeper as and when required - but at least twice per week.	Easy to implement and requires minimal equipment. Encourages a sense of pride and satisfaction amongst the staff which promotes vigilance and a positive culture. Staff should target the areas not caught by the road sweeper and other cleaning apparatus. All site personnel are aware of the importance of good housekeeping. The site is inspected at least twice a day.	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? NO

Sheeting of vehicles	Prevents the escape of debris, dust, and particulates from vehicles as they travel.	This is identified clearly in the site management system and implemented as appropriate measures. Drivers are made aware that the vehicles must be sheeted before leaving site. Only vehicles with automated sheeting are allowed on site	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? Human element but it will be monitored closely and regulated on site with corrective action being taken in instances of non compliance by staff

Abatement Measure	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Hosing of vehicles on exit	Removes major dirt, dust, and particulates from the lower parts of vehicles	Dedicated wheel washing occurs with mobile pressure washer if mud persist in the vehicle after going trough the cattle grid and if cattle grid is out of service. The site consists of impermeable surface throughout which reduce the chance of soil/dirt transfer.	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? Human element
Ceasing operation during high/strong winds and/or prevailing wind direction strong winds are considered to exist when the on site wind sock is nearing full extension. In light of experience on other sites showing this to generally start at around 15-20mph, strong winds are considered therefore to start on this site at 17mph	Mobilisation of dust and particulates is likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	Procedures are in place ensure when winds are above 17mph operations will cease 2 weather station installed on site & Windsock (visual assessment of the blocks lifted by the wind in the wind sock also provide an estimate of the wind speed) Visual inspections will be used to detect if dust is an issue If dust rises above a foot when walking or is noticeable during other site activities, the activity must stop, and the material wetted down. Operations will only commence once the dust has been successfully suppressed.	Will this be used all the time the site is operational? yes Visual inspection When the weather conditions dictate Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? Swirling wind can cause dust intermittently if this is noted the area will be wetted down, regardless of if dust is notable or not

Installed drive thru cattle grid with permanently flooded area	Provides a wash of the vehicle wheels. only one way out of the site, The movement of vehicles over the grids shakes dust and particulates from the wheels,	The site consists of impermeable surface throughout and it has road sweeper which reduce the chance of soil/dirt transfer. the cattle grid will prevent any fugitive emissions from leaving site. This is implemented on site to ensure all vehicles have clean wheels before exiting site. Maintenance of the cattle grid is covered in the management system and procedures. mandatory for all vehicles to drive through to cattle grid. If cattle grid is out of service a pressure washer will be used	Will this be used all the time the site is operational? Yes Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO
Abatement Measure	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Easy to clean concrete impermeable surfaces	Creating an easy to clean impermeable surface should reduce the amount of dust and particulate generated at ground level by vehicles and site activities.	Site is covered in an impermeable surface throughout. all surfaces are visually inspected daily to ensure that the integrity is maintained. Any damage is reported, and repairs carried out as soon as possible	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? NO
Minimisation of waste storage heights and volumes on site	Minimising the height at which waste is handled reduces the distance over which debris, dust and particulates could be blown and dispersed by winds. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	Due to the location material stockpile heights are restricted to 6.7m. The 360' excavator is highly skilled driver and can operate safely on top of a suitable waste stockpile, if safe to do so. Operation will be covered by specific SPO and RA Storage volumes are monitored and recorded. The site imports materials to move on as soon as possible. Financial conditions facilitate the need for materials to be moved quickly	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? no
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, or screening of high risk loads during windy weather strong winds >17mph considered as, where even with reinforced mitigation measures in place there is still a high potential for fugitive emissions to escape the site boundary as well as associated traffic movements should result in reduced	A weather system is used by the site The site is a commercial waste importer Reduced activities after 2200	Will this be used all the time the site is operational? the site is designed to operate at full throughput without any uncontrolled release of dust Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? N/A Are there any limitations to this abatement measure? N/A

	emissions and re-suspension of dust and particulates from a site.		

Remedial Measures	Description / Effect	Overall consideration and implementation	Trigger for implementation
On-site sweeping	Sweeping combined with dampening the area is an effective method to managing larger debris, dust and particulates Day to day site routine visual monitoring would trigger extra dampening and tidy up rounds on site. For the areas that cannot be access by the road sweeper, mobile equipment can be used by site staff. Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside.	This is implemented on site and covered in the management system and procedures and implemented thoroughly. The whole of the area is swept daily Road sweeper will be hired in twice a week. For unforeseen events or emergencies the schedule can be anticipated or increased.	Will this be used all the time the site is operational? YES Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO Are there any limitations to this abatement measure? to be effective works best if combined with dampening the area This may generate dust and particulate movement that may become a Health and Safety issue if the filters and spray bars on the sweepers are not maintained.
Water suppression with bowser (spray bar for flat surfaces and raingun attachment for dampening stockpiles	Using bowsers is a quick method of damping down large areas of the site with large water jets. This method could also be used on easy-to-clean, impermeable concrete surfaces, dampen down surfaces and stockpiles	This is implemented on site. It minimizes dust and particulates on the ground that is at risk of being re-suspended rather than already airborne dust and particulates. Very effective at dampening down haul roads and large surface areas. Site has a bespoke attachment to dampen down stockpiles	Will this be used all the time the site is operational? yes If not explain what will trigger the use of this abatement measure. Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? Are there any limitations to this abatement measure? no

Water Cannons	Water cannons provide a means for delivery of powerful water streams from a water truck. With variable nozzles, the spray pattern can be controlled and varied between jet and fog. Typical water flows are up to 5000 litres per minute. Water cannons are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate abatement.	Available on site to be deployed at any time. Highly water intensive and more likely to minimise dust and particulates on the ground that is at risk of being re-suspended rather than already airborne dust and particulates. Covers a large area in a short amount of time. Can reduce the calorific value of the material which should be considered if sent for energy recovery/biomass type operations.	Will this be used all the time the site is operational? YES If not explain what will trigger the use of this abatement measure. Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? no Are there any limitations to this abatement measure? Eg is there a limited power or water supply which might limit its use? no
Remedial Measures	**Description / Effect**	**Overall consideration and implementation**	**Trigger for implementation**
Dust and particulate monitor with trigger alarm	Installation of a dust and particulate monitor with specified alarm trigger level can alert site staff when short-term particulate concentrations are elevated in order that site practices can be reviewed or application of mitigation measures increased.	2 dust monitors (including weather station) are installed on site continuous monitoring with trigger alarm at 75 ug/m3 on avrg 5min reading installation has an automated email sent out to relevant site staff (eg site manager & weighbridge) to facilitate action from site staff if alarm is triggered. Internally the site considers as an "action level" to alert the operator that they generating dust 25 ug/m3,this is monitored with a portable dust monitor	Will this be used all the time the site is operational? YES If not explain what will trigger the use of this abatement measure. Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? NO, when maintenance/servicing is due a temporary replacement will be provided Are there any limitations to this abatement measure? no
Water suppression with mist sprays	Installation of mist sprays in the hopper by the trommels It assists in the damping down of dust and particulates, therefore, reducing emissions from site.	This will be implemented in the hopper by building 1. Uses less water than water bowser Maintenance is covered in the management system and procedures.	Will this be used all the time the site is operational? YES If not explain what will trigger the use of this abatement measure. Are there any situations that this abatement measure will not be used or areas of the site that this won't be used on? no Are there any limitations to this abatement measure? no

3.4 Further Sources and Control of Fugitive Dust/Particulate Emissions

The operations on site that have the potential to cause dust and particulates include.

- Vehicles entering and/or leaving the site with mud on wheels depositing dust as they move.
- Storage of wastes in external areas.
- Tracking dust on vehicle wheels in and out of the processing building.
- Particulate emissions from the exhaust gases of vehicles.
- Transfer of IBA to the process building via infeed hopper loading and conveyor.
- Agitated aggregates during operations.
- Turning IBA during ageing process
- Ferrous re-feed operations.
- Stainless steel operations.
- Aggregate infeed operations.
- Dust extraction system.
- C&D, other wastes, processing (including crushing and screening)
- Equipment vibration

The environmental risk assessment, in section 3.5 considers the source, pathway and receptor for each potential emission source and provides further details on management techniques to reduce emissions.

Often it is a combination of measures including using greywater dust suppression, full sheeting of all loaded vehicles arriving and leaving site, mobile sprinkler, mobile water canon, water bowser and the dust extraction systems (building 2) that provide the best results for dust suppression and will achieve good results in minimising any potential emissions from escaping site boundary.

Table 9: summary of dust suppression measures in place per dedicated area on site

Indoor/outdoor	Main area	Dust suppression/mitigation measures	Type of installation
Outdoors	IBA storage	Lego wall 7.2m with free board	Permanent
	IBA tipping	Sprinkler system	mobile
Outdoors	IBA/IBAA crushing including oversize IBA & ISS IBAA	Spray bars built into crusher (or external suppression) Sprinkler system Moisture content 15-20% Location in site	Permanent Mobile Intrinsic property Requires the water cannon in the vicinity when working

Outdoors but to be placed in suitable enclosure	Trommel	Lego walls for waste	Permanent
Outdoors	Waste pre trommel	Protected against prevailing winds (by building 1 and lego block wall)	Permanent
Outdoors	Hopper	Misting line in hopper	Permanent
indoor	Building 1	Enclosed building	Permanent
indoor	Building 1	Fast acting doors	Permanent
indoor	Building 1	Enclosed conveyors	Permanent
indoor	Inside building 1 Stockpiles 0-2 & 2-4 & aluminium	Fogging system	Permanent
indoor	Material processed in building 1	Moisture content 20% - 10% (decreases the potential to generate dust)	Permanent
Outdoors	West Bays around building 1	Lego block walls	Permanent
		Chute surrounded by lego blocks	Permanent
Outdoors	East Bays around building 1	Lego block walls	Permanent
		Protected by building one against prevailing winds, protected from eastern winds by IBA lego wall 7.2m	Permanent
indoor	Building 2 activities	Enclosed building	Permanent
		Fast acting doors	Permanent
		Cover to hopper (outdoors)	Permanent
		Fully enclosed equipment & dedicated extraction system	Permanent
Outdoors	Cattle grid	With bespoke wheelwash sump pre cattle grid	Permanent
Outdoors	Road sweeper	Available to use throughout the site	mobile
Outdoors	Water bowser with sprinklers for flat surfaces and rain gun	Available to use throughout the site	mobile

	attachment for stockpiles		
Outdoors	Mobile water cannon (x1)	Available to use throughout the site	mobile
Outdoors	Portable dust monitor	Available to use throughout the site	mobile
Outdoors	Dust Monitoring station x2 (monitoring North and East receptors	Monitoring TP, PM10 PM 2.5 PM1, with automated email is sent to relevant team (site manager, yard supervisor & compliance team) to investigate source of alarm	Permanent
Outdoors	C&D waste IN tipping and C&D waste screening and crushing	West side of site/ protected against prevailing winds	Requires the water cannon in the vicinity when working
Outdoors	C&D waste storage screened/crushed	West side of site/ protected against prevailing winds	Mobile water sprinkler system (west and North boundary)
Outdoors	Virgin aggregate storage	West side of site/ protected against prevailing winds	mobile water sprinkler system (west and North boundary)
Outdoors	IBAA storage, prep and loading final products	West side of site/ protected against prevailing winds	mobile water sprinkler system (west and North boundary)

3.5 Other considerations

In the event of any unforeseen events such as faulty equipment, lack of water supply, the site manager will assess whether to cease activities/all operations from a potential to generate dust perspective with the specific operational constrains.

4.0 Monitoring

4.1 General.

The monitoring will be undertaken using two (2) on-site 24-hour dust monitors. Dust monitoring data shall be subjected to regular review (weekly) and assessment against activities to identify those activities that may produce elevated levels of particulate matter. On review of the findings, the dust management and operational plans can then be adapted and opportunities for improvement developed, and more effective control developed.

The equipment shall be certified to MCERTS a standard developed by the Environment Agency. Current models used is a TSI Incorporated Environmental DustTrakTM Aerosol Monitor 854301-M1 monitoring total particles, TSP, PM10, PM2.5, PM1.

4.2 Monitoring location

The location of the continuous dust monitoring system 1 is located near the site entrance as this is where the highest level of vehicle movement occurs. This is also the closest point at which the general public pass the site, dog walkers, cyclists etc.

The location of the continuous dust monitoring system 2 is shown on Map 7, adjacent to the north western boundary of the site. The Environment Agency confirmed in EPR CAR ID DP3131NM/0481953 dated 27 November 2023 that the locations of the devices are appropriate. In the CAR form, the Environment Agency confirmed that Improvement Programme Requirements IC1 and IC2 in relation to particulate matter monitoring are completed and approved.

As described in section 2.4 Overview of IBA Processing and Dust Controls the storage of IBA does not produce dust in amounts significant enough to become a nuisance to its neighbours. The dust collection point is approximately 4 metres (2 meters will be considered) above the ground so that the wind flow is not disrupted or restricted. The dust monitor 1 includes wind direction and wind speed recording, dust station 2 includes dust levels for Total Particulate matter, PM10, PM2.5, PM1. Both dust stations are equipped with an alarm trigger on dust level for PM10.

4.3 Operation of the PM_{10} Continuous Monitoring Equipment

The following factors were taken in consideration in determining the threshold to set at which the alarm will be activated,

- Allow for background dust levels arising from the access road. The access road serves the entire area to Saxon Brickworks, and this would potentially include, yellow plant, HGV and general vehicles.
- Generally used value for dust monitoring Environment Agency Technical Guidance Note TGN M17 (TGN M17)
- Internally the environmental limit regarding Dust is no dust to escape the site boundary. the operational trigger level is 25 $\mu g/m^3$ average 5min this is monitored with the portable PM monitor inside the site boundary.

Based on the information above the proposed threshold alarm at the weather station is 75 ug/m^3, using a 5-minute averaging period. The alarm is uploaded to the units by the supplier, Socotec.

4.4 Quality Assurance/Quality Control and Record Keeping

The Site management will be responsible for ensuring that all equipment is serviced and calibrated in accordance with the manufacturers' guidelines. Servicing and calibration shall only be undertaken by competent registered specialist contractors.

If routine inspection or service identifies that the equipment is damaged or not functioning as it should be, this will also be noted in the Site diary and arrangements made for its repair as soon as is reasonably practicable.

All dust monitoring records will be kept for a minimum of 2 years.

4.5 Reporting of Data

Both dust monitoring stations collate data on a 5min internal, set up by the supplier. The data collected is retained on a cloud data storage folder provided by the supplier and support provider. The team on site (site manager and/or WAMITAB Operator Competence Scheme designed to provide technically competent people with the knowledge and skills to ensure waste sites comply with the Environmental Permitting (England and Wales) Regulations) will access the data on at least on a weekly basis at, or when a dust complaint is received, or an alarm is triggered (automated email to a chosen responsible), whatever occurs first.

Site staff will be trained on data interpretation and the thresholds for dust to allow for the data to be reviewed competently, any trends present will be investigated/reviewed further.

Data will also be provided to outside agencies for compliance purposes and to stakeholders and senior management as required for management reports. The Environment Agency confirmed in EPR CAR ID DP3131NM/0481953 dated 27 November 2023 that Improvement Programme Requirements IC1 and IC2 in relation to particulate matter monitoring are completed and approved.

4.6 Visual Dust Monitoring

A trained and designated member of staff will undertake daily walk round across the boundary daily. Visually inspecting the site operations and effectiveness of the dust abatement processes. The walk round will be carried out by a trained competent person in order to check that the prescribed dust management measures are also being followed by the site operatives. The overall site condition including security and surface conditions, among others, will also be visually inspected.

Appendix 5 shows the minimum number of site positions where dust must be monitored while the site is operational. As a minimum one daily site tour must happen with records kept in the daily log.
The results of this monitoring will be recorded in the Site diary in addition to any other abnormalities or issues that need addressing or discussing.

It is recognised that some activities have a greater potential to produce or disturb dust, therefore during any such activities, Site staff shall carry out visual dust monitoring on the location. If dust levels are detected (above 25 µg/m^3 outdoors see section 4.3 for more detail) in respect of this, or any other activity on Site, the site operatives shall respond with immediate dust suppression actions to decrease the dust levels and to prevent further dust emissions.

Site is also equipped with a portable dust monitor (appendix 8 for spec) to quantify and monitor dust levels on site. The monitor measures TSP, PM10, PM2.5 and PM1 simultaneously in real time. A dust audit will be carried out at least once a week inside and outside both buildings, to ensure a high standard of housekeeping is maintained.

From M17 guidance it references:
'Operators may be required to make regular (e.g. daily) visual assessments of dust emissions across the site boundary as part of their routine walkover inspections. Visual observations of dust emissions are affected by the subjective opinion of the observer, his visual acuity and powers of observation, and the environmental conditions at the time (e.g. light and wind conditions). The assessment criteria may be similarly subjective: for instance a permit may state that "there shall be no visible dust emissions". Despite its subjective nature, this simple, cheap and easy to implement assessment approach has the significant advantage of providing instantaneous information on problems (e.g. it may be possible to directly observe the source of the dust emission, such as a particular stockpile) allowing rapid actions to be taken to deal with the problem. Visual assessments therefore complement well other, more-quantitative dust monitoring that may take several weeks to produce results.'

We consider an "unreasonable dust level" to be any dust released by an activity that could potentially travel outside the site boundaries. In the latter case the operative would employ the bowser to be deployed and dampen the area.

All incidents and remedial actions will be recorded within the Site diary. The Site diary is kept within the Site Office and is always available for reference and inspection. The site management team and HSQE manager shall review these records on at least a daily and weekly basis unless specific incidents, responses and actions are required immediately.

5.0 Actions when alarm is triggered

In the event the alarm is activated the site supervisors will be made aware of high levels of particulates by the all staff and will investigate the issue. Dust suppression is required to be deployed immediately to mitigate all dust potentially arising from the facilities.

Following a dust alarm by one of the dust monitoring stations, the site manager should proceed as follows:
• site walk around in the area with the active alarm (either dust monitoring station 1 or 2)

• confirm the alarm is Inspected and the dust monitoring station is working correctly)
• Identify the site activities occurring in the vicinity at the time of the alarm that could potentially be the source of dust,
• If the source can be identified the site personnel will cease any potential dust-generating activity.
• If the source cannot be ascertained the likely source or area affected will be closely monitored or suspended.
• Identify the root cause and the chain of events that led to activate the alarm by high dust levels at the dust monitoring station
• Consider what steps can be taken to prevent a high reading happening again, (including review procedures, retraining of staff, improve dust suppression system, to mention a few)
• Record the incident in the Site diary, records will be kept on site.
• Update the management plan to reflect the preventative and improvement steps identified.

If an effective abatement technique cannot be identified and implemented and the observed PM_{10} levels remain above the action level for 25 minutes, then the site activities will be suspended until the PM_{10} concentration measurements drop below and remain there for 30 minutes.

In all cases, any findings and subsequent remedial actions developed from an investigation will be incorporated into the organisations operational and QMS systems and a revised dust management plan will be developed to prevent re-occurrence. The priority on site will be to minimize and or stop any dust escaping site prior to carrying out and investigation.

All such actions will be presented to the board of Directors and any improvements will be signed off prior to implementation. The responsibility of this will be fall initially to the site manager, if not on site it can be seconded to one of the following individuals on site WAMITAB/HSE advisor or HSE manager.

It is recognised that the alarm is not the sole indicator of a dust event occurring at the site, and in addition to this system the continuous visual monitoring of potential dust sources and activities is also an important part in managing dust and particulates at the site.

6.0 Complaints

Typically, complaints directed at the site are usually received via EA or local council. Complaints may also be received directly on site from the residents, the general public and employees.

In the event of a complaint being received the following actions will be taken:

- The information received will be reviewed.
- The site management/supervisors will be contacted by the HSQE manager and asked to investigate the situation.

The investigation may include some or all the following:

- Visiting the area of concern (if known)
- Talking to site employees and asking if they had noted any fugitive dust releases
- Ask the employees if any "unusual" activities had taken place that may have increased the potential for dust to be created and/or released.
- Ask employees if there had been any spillages or breach in containment of materials that may have given rise to dust being released.
- Talk to the weighbridge operative and check that there had not been any deliveries of notably dusty or potentially dusty wastes
- Download the weather conditions at the time of the incident from the on-site monitoring unit and review the conditions.
- Walking the site to identify the presence, source and extent of dust
- Gather evidence, witness statements, photos, samples etc

The initial information provided is entered on to the Share Point Computer system, by the HSQE manager. This is left "open" until the investigation has been completed.

Once the investigation is completed the findings are reported back to the site management, who discuss the issue with the HSQE manager, who in turn enters the details on to the My compliance software.

See appendix 6 for dust complaint form

6.1 Response to complaints

The site management will evaluate the information and data collected regarding the complaint and formulate a suitable response.

6.1.1 The EA generally require a response within 5 days working days, the requested information from the initial complaint will be compiled and sent to the EA along with any

downloaded monitoring data, photos etc. This is accompanied with comments on whether the complaint was justified or not and what actions were to be taken.

6.1.2 A response to the local council will follow the same lines as a response to the EA and include the same data, information, downloads, and comments

6.1.3 A response to a local resident or member of the general public will be via telephone. The telephone conversation will describe the situation, if known, any causes and actions taken and usually an invitation to visit the site and undertake an escorted site tour.

6.1.4 A response to an employee will be in the form of a chat and site walk to discuss the situation and to evaluate the current, on-going situation/concerns and actions taken/to be implemented.

6.1.5 All complaints will be investigated and reported within 5 working days of the complaint having been received

6.2 Reporting

Formal responses will be provided to all parties raising concerns as set out in section 6.1.
Further to these the following reporting actions are taken

- Daily operational meeting will provide details of complaints to make all employees aware of the situation and any proposed actions
- Daily senior management meetings will be provided details of a complaint by the site manager or HSQE manager
- Weekly complaint reports are compiled and distributed to the Directors
- Monthly complaints reporting forms part of the Board of Directors "Board Pack" and is discussed by the board of Directors at the monthly Board meeting.

6.3 Further actions

Following a complaint that has been confirmed to originate on site, the situation will be monitored to determine if there is a long-term issue or that the incident was an isolated incident If it is established that the controls and mitigation measures are not sufficient to prevent the dust release, operations will stop and an action plan is to be formulated and implemented. This would include undertaking a new environmental risk assessment, listing the new potential dust sources and include mitigation and control measures for each one, and update the Dust management according to the findings.

Incidents will be investigated within 24h, any changes to be implemented on site need to occur within 48 – 72hrs.

Once actions have been agreed and implemented the situation will be monitored and once a successful solution is in place the results will be provided to all interested parties, this may include the Board of Directors, EA, Local council, general public, locals, and employees.

In an abnormal situation that is detected where there is dust leaving the facilities, the site manager/or wamitab will inform the EA in advance with an explanation to the occurrence.

Any new recommendations and improvements will be incorporated in the Dust Management Plan and the operating procedures.

6.0 Engagement with the Community

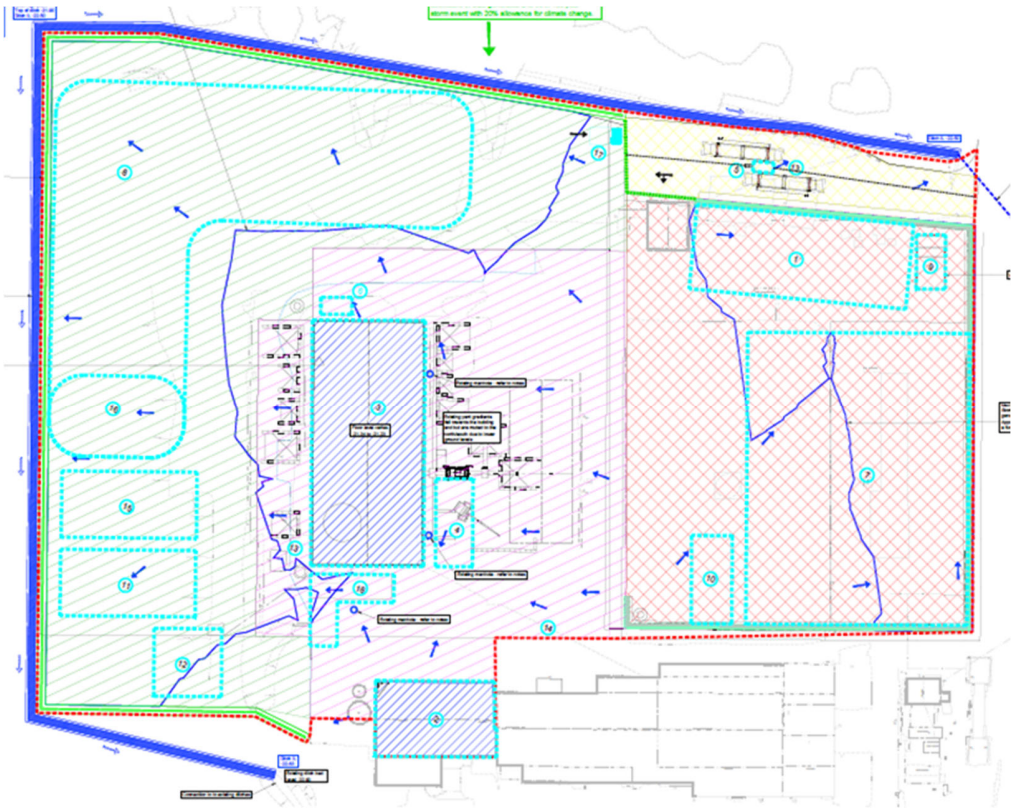
Johnsons recognises the benefit of communicating regularly with residents and the wider community and will endeavour to engage with residents and businesses as and when appropriate.

7.0 Summary

This DMP has been generated for the purpose of identifying measures implemented on site which will:

- minimise the generation of dust/particulates produced by Site activities, as far as is reasonably practicable, using appropriate best-practice measures.
- mitigate potentially adverse impacts of the residual emissions of dust and particulates after all appropriate control measures have been applied, with due regard to the sensitivity of the local surroundings.
- continuously monitor dust levels, wind speed and direction
- enable dust monitoring to be measured on site (using a portable dust monitor)
- enable visual monitoring of dust emissions and deposition (daily Site inspections)
- ensure investigation of incidents of unusual dust/particulate releases, impacts and complaints, and implement measures to prevent further occurrences.
- set objectives relating to continual improvement of dust monitoring and mitigation.

Appendix 1 Site map



Appendix 2: Sensitive receptors

Potential Sensitive receptor	Direction	Distance (approx.)
Park lane primary and nursery school	East	1000 m
Priors road	East	340 m
Railway Track	South	260 m
Kings Dyke	South	600 m
Kings Dyke Nature Reserve	Northwest	600 m
A605	North	190 m
Whittlesey Junior football club	North	570 m

Park lane primary and nursery school

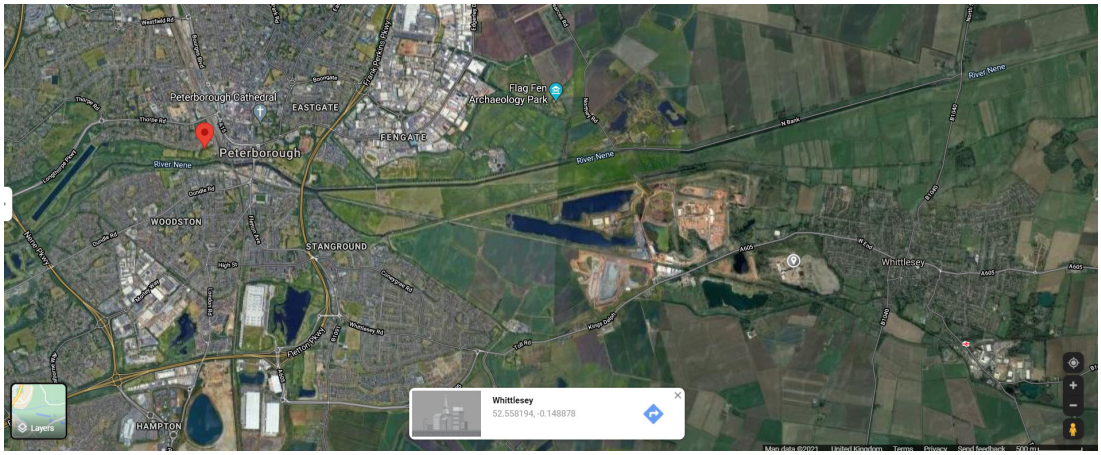
Priors road

Railway Track in red and A605 in blue

Kings Dyke Nature Reserve with Red pin and Kings Dyke with grey pin

Whittlesey Junior football club identified by the red pin

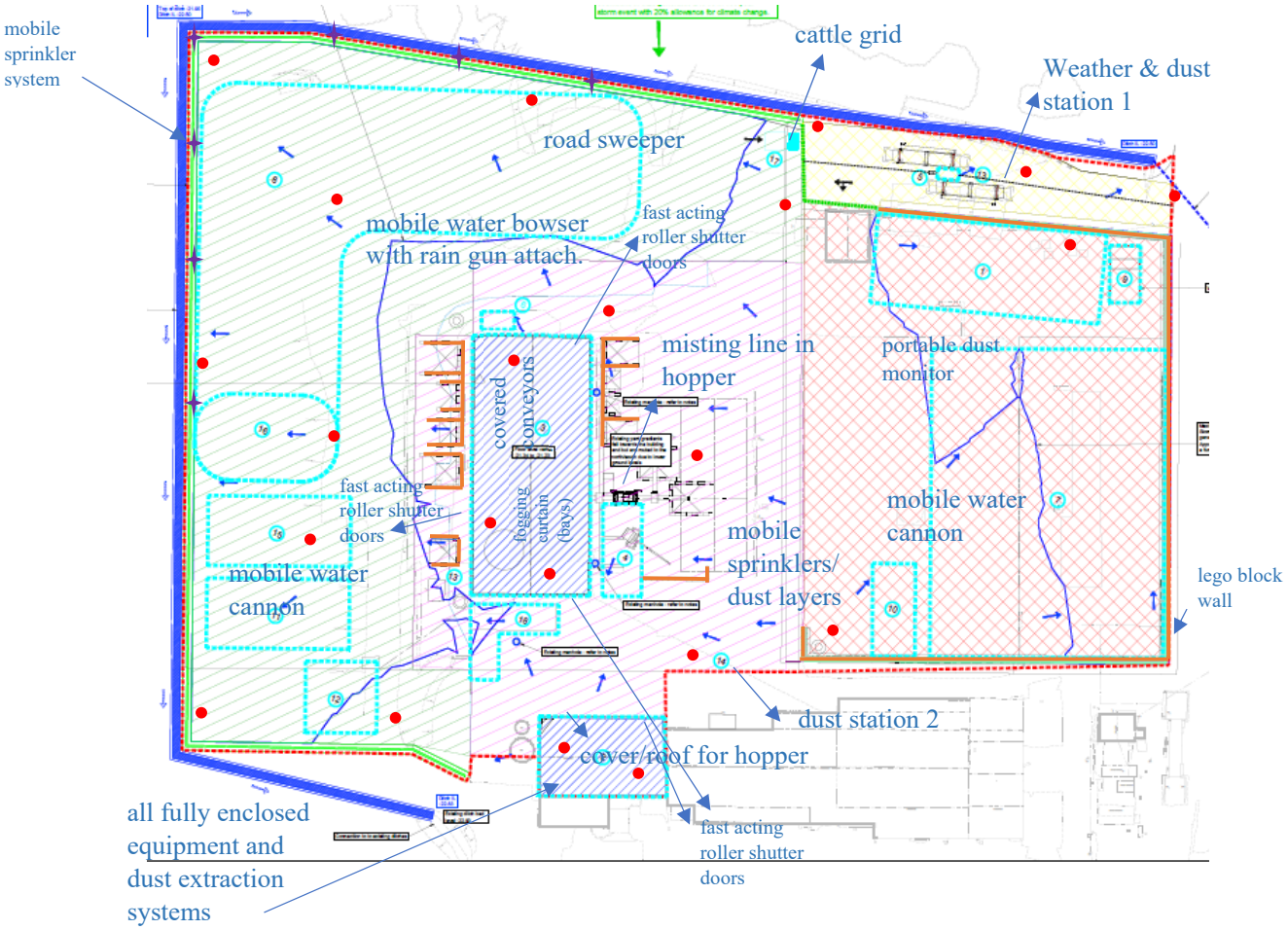
Appendix 3 Location of weather stations in relation to site



Location of Whittlesey weather station in relation to site

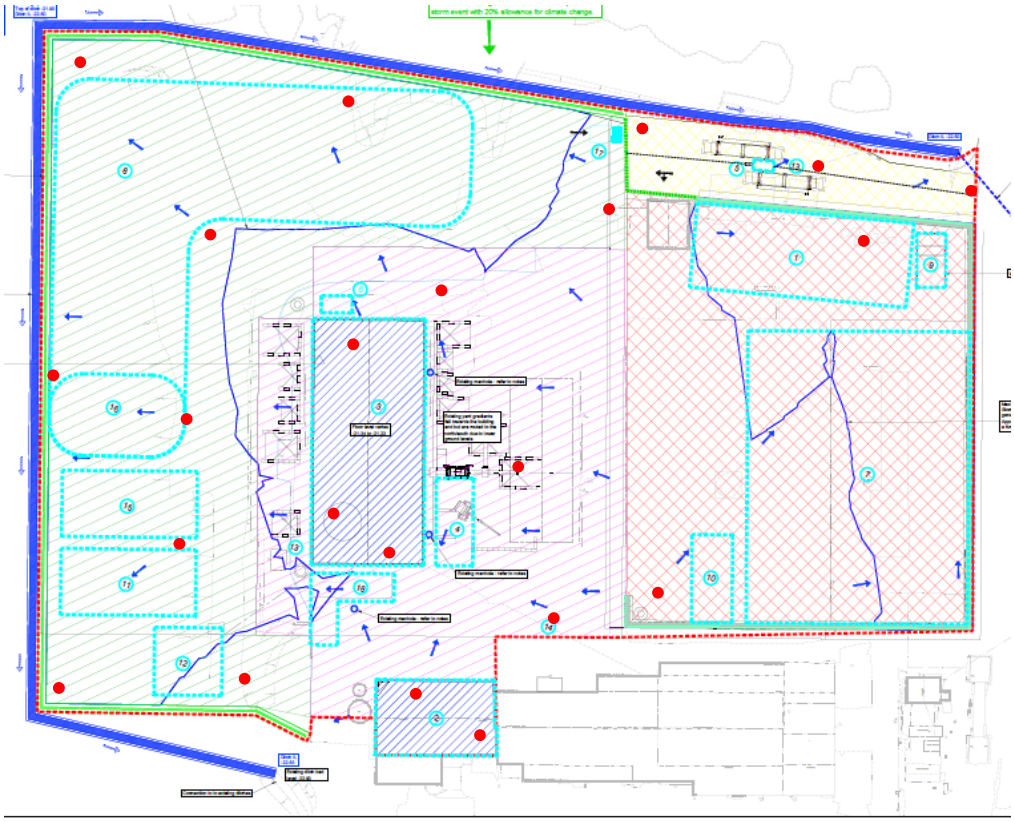
Appendix 4 Location plans of dust and particulate suppression systems

- positions for site monitoring route



Appendix 5 site layout with emission monitoring points for noise and dust

- positions for site monitoring route



The positions for routine monitoring might changes based on risk and potential for environmental issues

Appendix 6 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	

Appendix 7 Water bowser specifications

The water Bowser available on site will be used to dampen roads, stockpiles and the yard. It has an attachment bespoke to spread stockpiles of material, capable of reaching up to 70m high.

2400 Gallon Dust Tanker

Client: Quattro (UK) Ltd, London, UK

London-based Quattro (UK) Ltd is a multi-disciplined supplier of services to the construction, utilities, building and recycling industries with a long list of satisfied clients and customers ranging from residential projects to multi-million pound corporate and municipal contracts across the UK.

Quattro (UK) Ltd have several crushing, recycling and processing sites. The handling process creates significant levels of dust, which can cause health issues for operators and neighbouring residents if not controlled properly.

Their 10,910 litre/2400 gallon dust suppression tanker ensures that they comply fully with legislation and implement best practice when it comes to environmental management.

6

Design Details

- ✓ 2400 gallon internally baffled tanker with a painted finish to the clients specification.
- ✓ Hydraulically operated road blaster bar for close contact and intense cleaning. It is lifted clear for transport.
- ✓ Rain gun water cannon to access and dampen down earth storage clamps up to 70m/230ft high.
- ✓ Commercial axle rated to 100km/hr with suspension for safe road transportation
- ✓ 8000 litre Garda pump

MAJOR tankers are totally reliable. In all the years we have had them, we've had no issues. That's important, because we hire them out a lot throughout the year. They are very simple to operate so suit many of our customers.

Each tanker provides us with a multi-functional facility for lots of different jobs. Not only with the rain gun and spinner suppressor, but they also have an integral wash-down facility which we can use on site for our construction equipment. It can be used for cleaning muddy roads as well before the sweeper goes in.

Major Equipment has top class engineers and are always willing to manufacture something special, built for purpose and built to last.

MICHAEL MCDERMOTT
PLANT MANAGER, QUATTRO (UK) LTD.

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https://www.major-equipment.com/wp-content/uploads/2020/01/2400_Gallon_Dust_Suppression_Quattro.pdf

Appendix 8 Dust monitor specifications

Turnkey Instruments Ltd

Tel: +44 (0)1606 330020 www.turnkey.tel

APM

Osiris Monitor
Sira MC 090157/01

Topas Monitor
Sira MC 090158/01

Airborne Particulate Monitors

- **Real time air quality monitoring**
- **Simultaneous TSP, PM10, PM2.5 & PM1**
- **Multi-monitor networks**
- **Spot monitoring, portable or permanent installations**
- **Meteorological instruments**

Turnkey Instruments design and manufacture a range of easy to use instruments which continuously measure and record the concentration of airborne particles. In their environmental mode, these instruments can simultaneously monitor the concentrations of TSP, PM10, PM2.5 and PM1 particles. Alternatively, in their workplace mode, the inhalable, thoracic and respirable fractions can be monitored.

An internal reference filter can be used to confirm the gravimetric calibration of the instruments.

All instruments feature internal data logging for the particle concentrations. Osiris and Topas also allow wind speed and direction, temperature, humidity, rainfall and two external gas or noise meter inputs to be recorded at the same time.

All instruments use our own proprietary nephelometer. A pump continuously draws an air sample through the nephelometer, which analyses the individual particles as they pass through a laser beam. These same particles are then collected on the reference filter. The nephelometer's dedicated microprocessor can analyse individual particles even if there are millions of them per litre. This allows size fractions to be determined at concentrations up to several mg/m^3. Above this there is an indicator range which can be used without sizing up to 60 mg/m^3.

TURNKEY

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Osiris (Particulate Monitoring)

The Osiris is a small and compact instrument that can be used to study short to long term particulate monitoring. Powered by various power options to suit your application. The Osiris can be used effectively to determine exceedance areas.

DustMate

DustMate is a hand-held detector ideal for short term sampling. Highly effective for monitoring air quality within buildings and clean rooms. It measures TSP, PM10, PM2.5 and PM1 simultaneously in real time. Data can then be transferred to a PC via PC-Link.

Topas (Particulate Monitoring)

The Topas fixed station monitor is intended for long term installation. Several sites can be networked together to form a city wide monitoring system, which can be controlled by various communication means including GSM, 3G router or radio modem.

Osiris (site sentry, full site monitoring system)

When Osiris is used with i-dB, Turnkey's latest noise monitor, a full site monitoring station can be used to meet all regulations. The system is designed to provide remote online monitoring of dust and noise emissions to meet regulatory requirements. This innovative web based remote system simultaneously measures multi-parameter dust, noise, wind speed and direction, temperature & humidity and rainfall from a single UK based manufacturer. All data is stored on a web based secure system with private login.

Topas (site sentry, full site monitoring system)

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AirQ Software, AirQWeb & AirQApp

Environmental Monitoring Software

AirQ the user friendly and quick reporting PC software, designed in-house will manage and display results from our range of environment sensors.

AirQ can be used to control sensors and record measurements in real time

- "Live" graphs and tables appearing on the PC screen.
- Software automatically starts and stops sensors.
- Change parameters and configurations.
- Upload stored results.
- Powerful database engine.

With **AirQ** a live "on-screen" pollution rose can be created which plots measurements against wind direction on a polar chart.

Networked Environmental Monitoring

Creating a network of sensors is easy. Any number of sensors can be connected to an **AirQ** network created with fixed wiring (up to 10km), licence free radio telemetry (up to 20km), telephone and GSM cellular modems.

A network can include alarm facilities such as beacons or sirens for early warning and response to high readings. It can also active water sprinkler systems for damping down exceedance levels of dust.

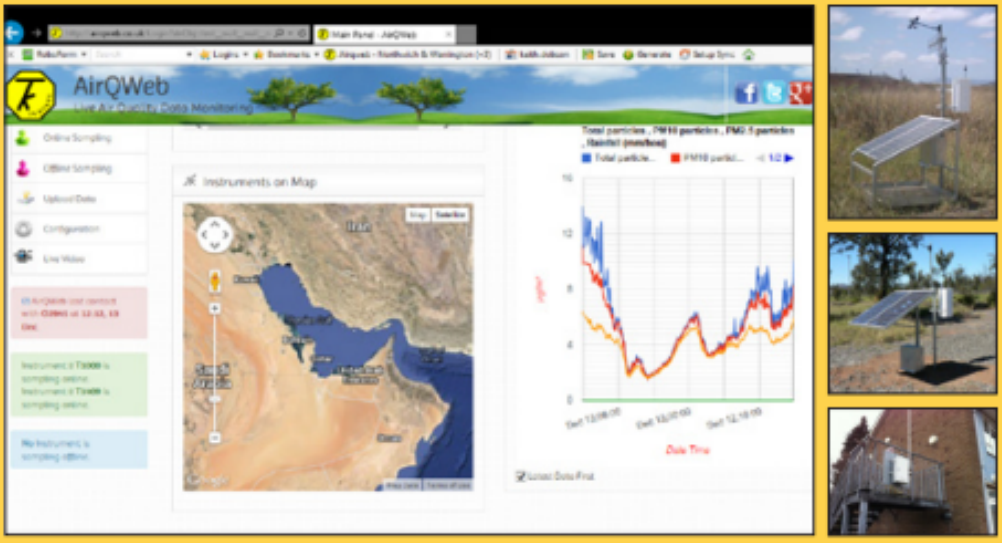
AirQWeb & AirQApp

Units fitted with a web router can be accessed via the internet (M2M simcard with 2GB data, fixed or dynamic public IP address, required).

Also via smartphone app, instant alerts can be sent to your phone before a likely exceedance breach occurs.

Alerts can be set for wind direction and wind speed, as well as dust levels.

A remote pan/tilt rotate IP camera can be added when connected via the web.



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Feature	Description	TOPAS	OSIRIS	DUSTMATE
Standard inlet	TSP (1mm stainless mesh)	✓	✓	✓
Heated inlet	Heating to 60°C	✓	✓	•
Detector	Turnkey laser nephelometer	✓	✓	✓
Environmental mode	TSP, PM10, PM2.5, PM1.0	✓	✓	✓
Workplace mode	Inhalable, thoracic, respirable	✓	✓	✓
Measurement range	0 to 6000 micrograms per cubic metre	✓	✓	✓
Detection limit	0.01 micrograms per cubic metre	✓	✓	✓
Indicator range	0 to 60mg/m³ without particle sizing	✓	✓	✓
Particle size range	0.5 to 20 micron diameter	✓	✓	✓
Particle counting mode	Three size channels in particle per cc	✓	✓	✓
Flow rate	600cc per minute	✓	✓	✓
Reference filter	25mm diameter GFA circle	✓	✓	✓
Operating temperature	-5°C to +50°C	✓	✓	✓
Security	Password protection	✓	✓	✓
Alarm	Siren, text to cellular phone, visual beacon and email	✓	✓	×
Display	Two line alphanumeric with backlight	✓	✓	✓
Data storage	Internal with separate battery backup	128k byte	128k byte	32k byte
Averaging period	1 second to 4 hours	✓	✓	✓
Battery	Sealed lead acid, rechargeable	n/a	Internal 6v 2.8 AH	Belt pack 6v 1.2 AH
Sampling current drain	Including heated inlet and backlight	1.2A	1.2A	200mA (without heated inlet)
External power pack	80 to 260v AC input, weatherpoof	•	•	×
Meteorological inputs	Wind speed and direction, rainfall, temperature and humidity	✓	✓	×
Other logging inputs	Two 0 to 5 volt analogue inputs	✓	✓	×
RS232 I/O	9600 baud via PC-link	✓	✓	✓
Telemetry I/O	1200 baud opto isolated	✓	✓	×
Analogue output	0 to 4 volt analogue of TSP or PM10 channel, 12 bit resolution	•	•	×
Wall or lamppost box	Lockable steel	✓	✓	×
Case protection	To IP66 (excluding inlet and exhaust)	✓	✓	Carry case
Dimensions	External dimensions in mm	400 x 300	260 x 160 x 150	160 x 100 x 100
Weight	Instrument and enclosure approximate weight in kg	12kg	11.8kg	1.2kg
Power options	Solar, wind, mains and battery	✓	✓	Mains and battery only

✓ Fitted as standard × Not available • Available as option

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Appendix 9 Water cannon specification

Spray Cannon

The Spray Cannon range by Garic is composed of ten dust control units which provide you with options based on performances and size of the area covered by the nebulized water.

QUICK SPEC

- Unique fine misting solution
- Generator or mains powered
- Indoor or outdoor options
- Heavy duty & robust dust suppression
- Stand alone or fully self contained systems
- Static and towable options available

ADD ONS

Appendix 10 Fogging system in building 1

corgín

Clean water, clean aír.

ATOMISTERAIRO

INSTALLED DUST AND ODOUR SUPPRESSION SYSTEM

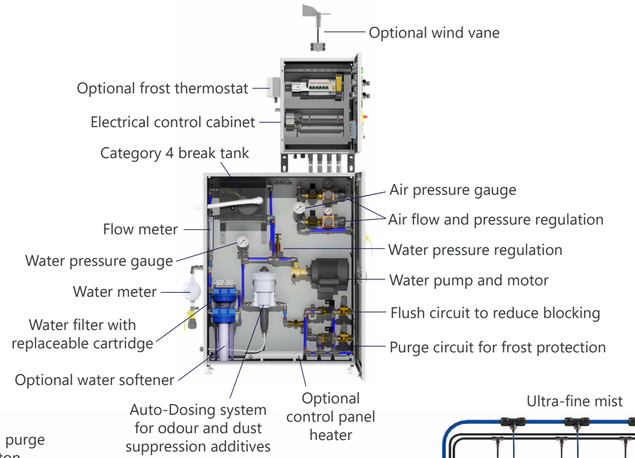
AtomisterAiro System

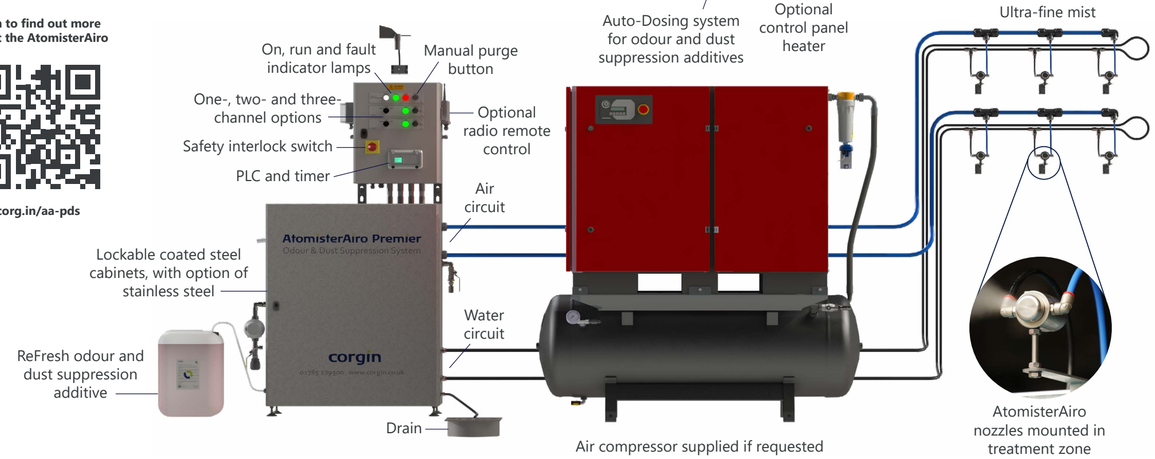
Air-atomising suppression system with low water usage for controlling dust and odour emissions on sites with available power and water.

- **Powerful, directional, ultra-fine, air-atomised mist**
- **Effective capture of fine, airborne dust and odours**
- **Adjustable flow to achieve 'non-wetting' spray**
- **Water usage as low as 1 litre/hour per nozzle**
- **Auto-Dosing system for suppression additives**
- **Configurable and adaptable modular system**
- **Water droplets sized to capture inhalable and respirable dust**

Scan to find out more about the AtomisterAiro

corgin.in/aa-pds





Model	AtomisterAiro Eco System	AtomisterAiro Premier System
Air-atomising nozzles		
Description	Heavy-duty atomising nozzles manufactured in 316 stainless steel, with water flow regulation, and anti-block and anti-drip features	
Water output	1 - 10 litres per hour (adjustable)	1 - 10 litres per hour (adjustable)
Working water pressure	6 bar	6 bar
Number of nozzles (design)	11 - 55	11 - 55 (optional 55 - 90)
Control Panel		
Description	1x powder-coated, mild steel enclosure with lockable door. Option of stainless steel.	1x mechanical and 1x electrical enclosures with lockable doors, manufactured in powder-coated mild steel. Option of stainless steel.
Ingress protection	IP66 rating, downrated by 27 mm drain hole in floor of enclosure.	IP66 rating, except mechanical enclosure is down-rated by 27 mm drain hole in floor of enclosure.
Weight	~ 50 kg	~100 kg
Dimensions (W x D x H)	600 mm x 300 mm x 800 mm	Mechanical enclosure: 800 mm x 300 mm x 1000 mm. Electrical enclosure: 400 mm x 210 mm x 500 mm
Thermostatic heater	Optional extra	Optional extra
Noise level during operation	<80 dBA at 1 metre	<80 dBA at 1 metre
Mounting	Floor (free standing) or wall	Floor (free standing) or wall
Water System		
Pump type and size	Centrifugal pump driven by 0.375 kW pump and motor	Centrifugal pump driven by 0.375 kW pump and motor with 'run dry' protection
Water supply requirement	Up to 10 litres per hour per atomising nozzle at >0 bar	Up to 10 litres per hour per atomising nozzle at >0 bar
Water supply connection	Typically 1/2" BSP female connection	Typically 1/2" BSP female connection
Filtration	20 micron replaceable filter cartridge	20 micron replaceable filter cartridge
Pressure monitoring and regulation	Pressure gauge and regulator to monitor and adjust pressure	Pressure gauge and regulator to monitor and adjust pressure on each channel
Backflow protection	Excluded (to be provided by others)	Category 4 break tank
System drainage/purge	Manual purge function	Automatic purge function (optional thermostatic control)
System tubing	Typically 8-20 mm MDPE and Nylon tubing	Typically 8-20 mm MDPE and Nylon tubing
Additive Auto-Dosing system	Mechanical proportional dosing pump	Mechanical proportional dosing pump
Compressed Air System		
Compressor type and size	Compressor and receiver set typically between 4 kW and 22 kW depending on system size. Refer to system-specific specification.	
Air supply requirement	2 cfm (3.4 m3/h) per nozzle at 6 bar (minimum)	2 cfm (3.4 Nm3/h) per nozzle at 6 bar (minimum)
Typical air supply connection	1/2" BSP female connection	1/2" BSP female connection
Pressure monitoring and regulation	Pressure gauge and regulator to monitor and adjust pressure	Pressure gauge and regulator to monitor and adjust pressure on each channel
System tubing	Typically 8-20 mm MDPE and Nylon tubing	Typically 8-20 mm MDPE and Nylon tubing
Electrical Controls		
Control functions	Single treatment channel with on/off control	Option of 2 or 3 treatment channels, each with 24/7 timer, provision for control signal from remote switch (such as from process plant or windvane), and manual override
Total power requirement	Control enclosure: 0.5 kW. Compressor: subject to system design	Control enclosure: 0.5 kW. Compressor: subject to system design
Full load current	Control enclosure: 3 A. Compressor: subject to system design	Control enclosure: 3 A. Compressor: subject to system design
Required power connection	Control enclosure: 240 V, 13 A, 50 Hz. Compressor: 400 V, 3 phase with D-rated breaker (size subject to system design)	
Remote control	Optional extra: remote control receiver and handset with on/off switch for each channel with up to 200 m range based on clear line of sight. Provision for up to 7x handsets	
Approvals	UKCA conformity to Supply of Machinery (Safety) Regulations 2008, Electrical Equipment (Safety) Regulations 2016, Electromagnetic Compatability Regulations 2016, as amended.	

"We are pleased so far with your [AtomisterAiro] system on trial in our plant. The atmosphere appears clearer and tests have shown a 50% reduction in dust levels. I have no complaints regarding Corgin or your staff."

Engineering Supervisor, Minerals Processer, Devon

"I would like to take this opportunity to let you know that since its installation in January 2014, complaints from the sector of site covered by the system have reduced by more than 70%, clear evidence that the system works as it had been designed..."

Operations Manager, Recycling Company, Buckinghamshire

Corgin Ltd, Tollgate Drive, Tollgate Industrial Estate, Stafford, ST16 3HS W: www.corgin.co.uk T: +44 (0)1785 229300 E: sales@corgin.co.uk Revision 2.4

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CORGIN ATOMISTERHYFLO SYSTEM SPECIFICATION DATA SHEET

DESCRIPTION

When High-intensity targeted dust suppression is required for outdoor applications, make AtomisterHyflo your choice. Utilising the same, well-proven treatment concept as our DustLayer mobile unit, the high-pressure, high-volume nozzles are designed to deliver a voluminous flat-fan mist spray for situations where there are intensive dust emissions.

FEATURES AND BENEFITS

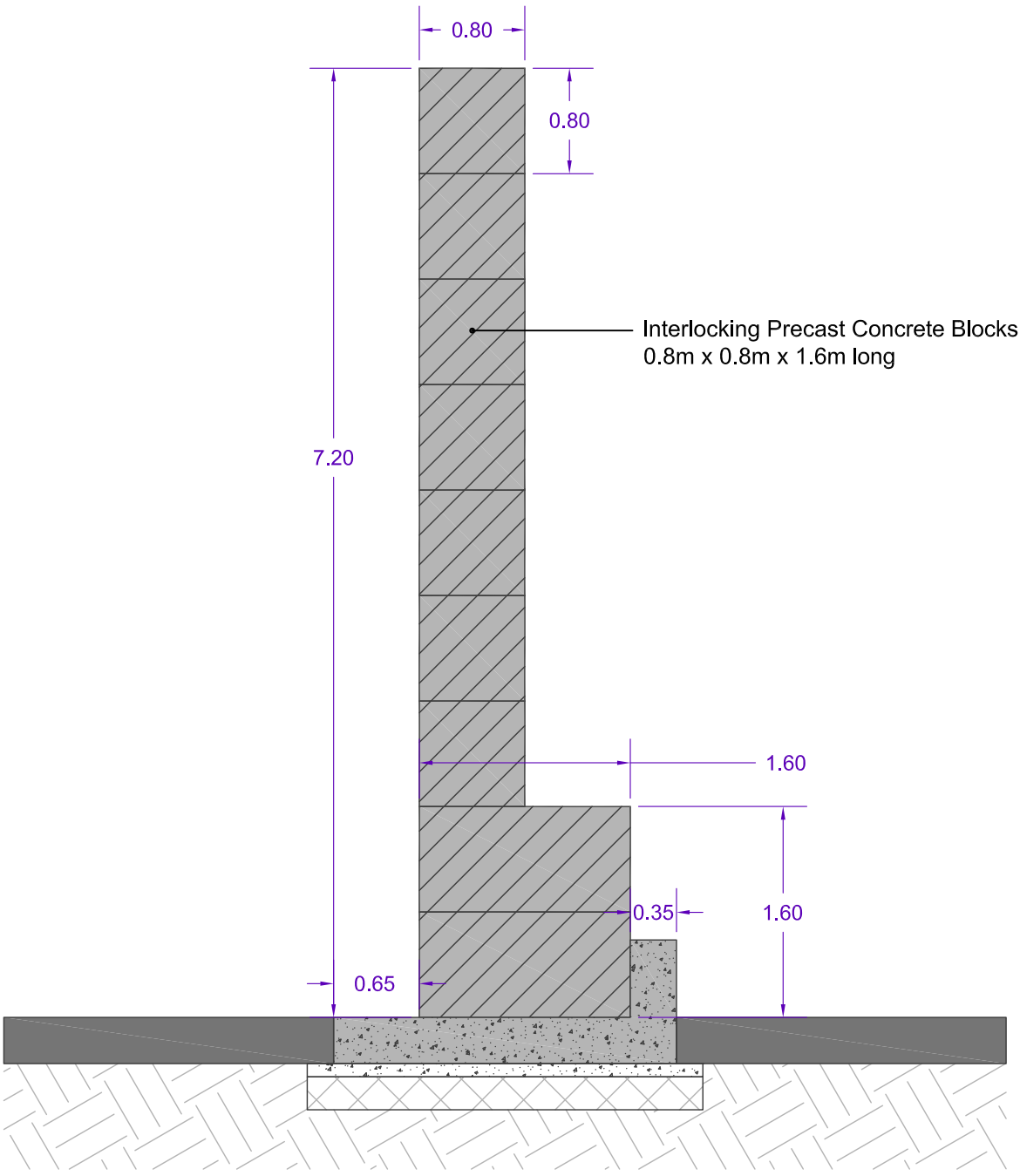
- Proven effectiveness at controlling site dust emissions, mitigating the risk of regulator fines, interrupted operations, site closure and reputational damage
- Featuring high-pressure, high-volume atomisation which delivers a voluminous, flat-fan, finely-atomised spray, for controlling intensive dust emissions effectively
- Robust componentry to deliver longevity and low maintenance
- Automated functions and facility to reduce system usage to only when it's required, as well as reducing operator invention
- Low water usage
- Finely-atomised spray for increased contact area
- Strong, galvanised steel skid to house water pump and controls
- Anti-freeze dosing feature available if required

SPECIFICATION

Pump Model	M100-1040 (QS202)
Operating Pressure	150 bar
Motor	Tec
Flow	21 litres per minute
Dry Weight	Kg
Overall Dimensions – Length	1,200 mm
Overall Dimensions – Width	1,200 mm
Overall Dimensions – Height	1,400 mm
Dosing Pump	Dosatron

Appendix 11 Typical Stockpile Wall Section

TYPICAL STOCKPILE WALL SECTION



Rev	Description	Initial	Date

GPP
GP PLANNING LTD

Planning Consultants

T: 01604 771123 E: info@gpplanning.co.uk W: www.gpplanning.co.uk
iCon Environmental Innovation Centre, Eastern Way,
Daventry, Northamptonshire. NN11 0QB
Registered in England No. 6019666

TITLE:	Saxon Brickworks, Whittlesey, Peterborough PE7 1PJ Typical Stockpile Wall Section
CLIENT:	JOHNSON AGGREGATES & RECYCLING LTD

DRAWN BY:	KD	CHECKED BY:	CS
DRAWING NO.:	GPP/JA/SB/P/24/03	REV NO.:	1
SCALE:	1:50 at A4	DATE:	12 Jan 2024
SCALE BAR:	0 1 2		

ORIGINAL A4 SIZE SHEET

Appendix 12 Particle Size Distribution data for ISS IBAA

Kiwa CMT

Client: Johnsons Aggregates and Recycling Ltd
Crompton Road
Ilkeston
Derbyshire
DE7 4BG

Kiwa CMT
Unit 5 Prime Park Way
Prime Enterprise Park
Derby
DE1 3QB

T +44 (0)1332 383333
E cmt.enquiries@kiwa.co.uk

www.kiwa.co.uk/cmt

Date: 29th January 2024

Lab Ref: 71522

Originator: Denzil Manivannan

Order Ref: 22757

Site: Whittlesey

Samples:

1No. sample weighing approximately 20kg was sampled by the client and delivered to Kiwa CMT on 29th January 2024. A sampling certificate was not provided.

Requirements:

Determine the Particle Size Distribution of 1No. sample in accordance with **BS EN 933-1:2012**.

Results:

The individual results sheets may be viewed on page 2 of this report and test results relate solely to the samples as received.

Kiwa CMT Testing

Author: L Anaz
Technical Administrator

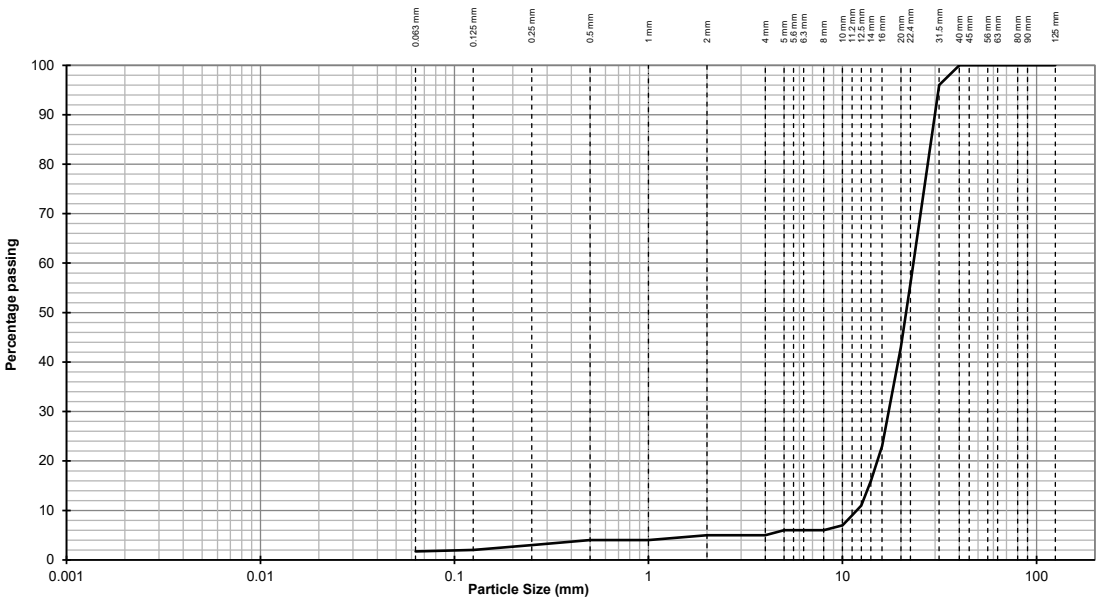
Checked and approved by: R. Cartlidge
Department Head

Kiwa CMT

Particle Size Distribution

Client:	Johnsons Aggregates	**Sample ref:**	71522/Whittlesey 22-40mm	**Date Tested:**	13-23/02/2024	**Sampled by:**	Client
Site:	Whittlesey	**Sampling cert.:**	Not given	**Sample size:**	10kg Approx.	**Source:**	Site
		Lab ref.:	71522	**Description:**	Recycled Aggregate		

Sieve Size (mm)	% Passing
125	100
90	100
80	100
63	100
56	100
45	100
40	100
31.5	96
22.4	56
20	43
16	23
14	16
12.5	11
11.2	9
10	7
8	6
6.3	6
5.6	6
5	6
4	5
2	5
1	4
0.5	4
0.25	3
0.125	2
0.063	1.7



Comments: Test carried out in accordance with **BS EN 933-1: 2012**

Kiwa CMT

Authorised by: D. Newton
Laboratory Supervisor

UKAS TESTING 0529