AC ENVIRONMENTAL CONSULTING

Dust & Emissions Management Plan

Northern Refine Ltd

Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ

August 2022

Ref: NR.PT.DEMP.2208

AC Environmental Consulting Ltd

Environment House,

Werrington Road,

Stoke-on-Trent

ST2 9AF

Reference & Revision	Issue	Prepared	Approved
NR.PT.DEMP.2208	**1**	**LS**	**DA**

CONTENTS

1. INTRODUCTION

AC Environmental Consulting Ltd, on behalf of Northern Refine Ltd, have prepared a Dust & Emissions Management Plan (DEMP) for the Northern Refine Ltd site located at Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ.

1.1 Site Location

The site consists of an industrial unit within a larger industrial estate which is surrounded by additional industrial and commercial properties with open fields to the east and north, and residential houses beyond to the west. Reference to the DEFRA Air Quality Management Area (AQMA) interactive map indicates that the site is not within an AQMA for PM_{10}, however it is in an AQMA for NOx. The nearest residential housing is located approximately 410m to the southwest on Doncaster Lane.

1.2 Existing Use

Northern Refine Ltd is seeking to obtain a bespoke environmental permit to operate a Catalytic Converter (CAT) centre at Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ. The permitted area will be a small-scale operation situated within an industrial unit that will store and treat CATs. A maximum of 500 tonnes of CATs will be accepted per annum, and it is expected that 1-2 tonnes per day will be accepted on average.

1.3 Proposed Use

The existing uses stated above will not be impacted by the bespoke permit application. The site uses and activities will not be altered by the bespoke permit application, and this DEMP has been written to accompany the application.

1.4 Potential for Emissions

Due to the type of waste accepted on site, there is the potential for dust to arise. Further information on the potential sources of dust can be found in Section 3.2. The processing of the CATs is the activity with the highest potential of producing dust. Steel CATs will be bagged and stored pending dispatch to a suitable recycler. Ceramic CATs will be transferred to the process area where they will be 'de-canned' using a shear. The internal matric will then be placed into a hopper and milled to produce powder which will be stored in sealed bags. The powder is then dispatched to a refinery where the precious metals in the CAT are recovered. These materials are defined as product and not waste once processed.

All areas where vehicles and plant are operated are on a concrete surface. Operating vehicles and plant on the concrete surface will prevent the potential for mud and therefore reduce the risk of

material from being transferred onto the public highway by vehicles exiting the site. Any accumulation of dust on site will be removed by hand through the industrial vacuum with HEPA filters, mobile dust collectors, sweeping or by using a mechanical sweeper.

There are no other expected emissions to be produced on site.

1.5 Emissions Prevention

The operations will be governed by the conditions attached to the bespoke environmental permit that may be granted in due course. Abatement measures include the use of the onsite industrial vacuum with extraction HEPA filters fitted to the bags, the two mobile dust collectors, the permanently fitted dust extraction system on the processing machinery, and manual sweeping. As part of a management procedure, daily inspections shall take place, and where visible accumulations of dust are present, road sweepers shall be employed to sweep the highway.

A major benefit of the site infrastructure is that the site is entirely concreted and the permitted area is enclosed entirely indoors within the industrial unit building. The concrete surface makes it easy to clean regularly in accordance with the cleaning schedule provided in Appendix B using a manual or mechanical sweeper if any accumulation of dust becomes visible. The easily maintained concrete surface prevents the build-up of potential dust, mud, and debris, therefore reducing the risk of material being transferred to the public highway by vehicles exiting the site. Enclosing all waste processing and storage indoors reduces the risk of the spread of dust through wind whipping. The means of prevention discussed are based on existing site management procedures and the planning permission guidance. Further details on emission control and maintenance can be found in Table 3.1 and 3.2.

1.6 Purpose of the DEMP

The purpose of this document is to meet the requirements of and reassure the Environment Agency that the potential for dust produced from the proposed operations are mitigated and controlled in every possible way.

The DEMP has been prepared with the aim of obtaining a bespoke environmental permit to allow for a Catalytic Converter (CAT) centre at Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ.

The audience of this document is the Environment Agency for approval. The document will be made available to the onsite operational staff, the Environment Agency, and Doncaster Council officers by being stored in the site office and online. Also, staff will be trained in the requirements of the DEMP via toolbox talks.

1.7 Sensitive Receptors

The site has various sensitive receptors nearby that may be vulnerable to dust emissions. They are referred to as sensitive receptors due to them being in areas where the occupants are more susceptible to the adverse effects of exposure to high levels of dust and particulates. These receptors include residential, commercial, and industrial premises. The mitigation measures being proposed include enclosing all waste processing and storage within the industrial unit building, and the use of an industrial vacuum with HEPA filters, two mobile dust collectors and the permanently fitted dust extraction system on the processing machinery. During any incident, receptors will be notified via phone call or by operatives knocking on doors and informing them of incident and reassuring them that every dust mitigation measure possible is being undertaken. Their distances to the working area and their sensitivity to dust emissions is shown in Table 1.1.

The nearest sensitive receptors are the residential properties located approximately 410m to the southwest. Due to the site being situated within an industrial location on Adwick Business Park within a predominantly rural area, there are no additional sensitive receptors within 1km of the site.

Due to the nature of the operations on site, the greatest proportion of dust emitted is largely deposited within 100m of the dust source. As stated by The Guidance on the Assessment of Mineral Dust Impacts for Planning 2016, it is acknowledged that the greatest impacts will be within 100m of the source, referring to both small and large dust particles. This indicates that the receptors lying beyond 100m from the site will not be greatly impacted by any potential dust producing operations on the site. The less dense dust material only reaches a maximum of 100m, meaning the receptors beyond 500m of the site are at very low risk of being impacted by fine dust. The map displaying the locations of the sensitive receptors is shown in Figure 1.1. There are also dust producing operations occurring close to the residential housing including a stone cutter facility, a trucking company, a tyre shop and the Adwick Railway line.

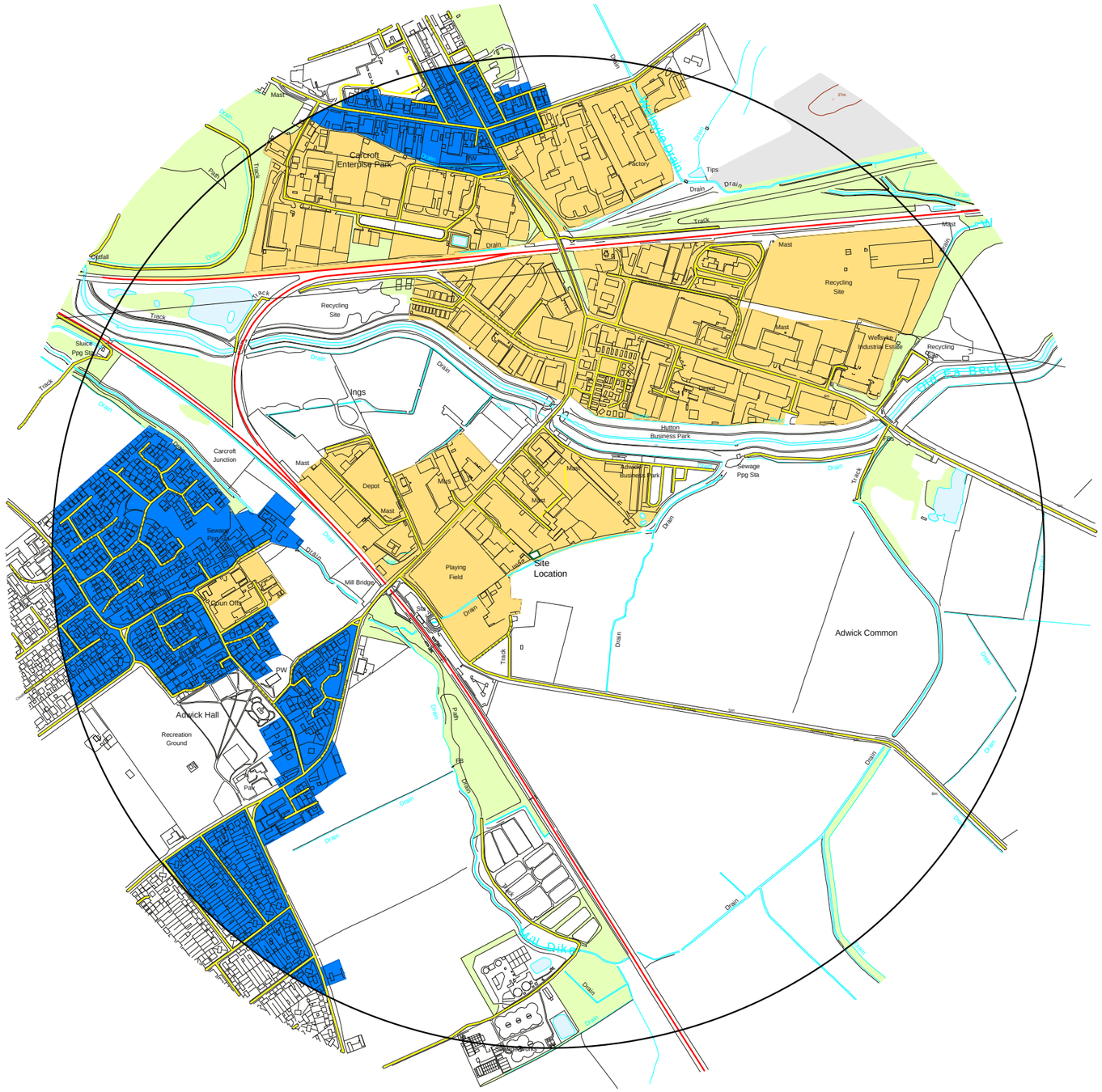
Additional receptors not considered sensitive within the 1000m radius includes the Adwick Le Street Cricket Club approximately 810m to the southwest of the site, the Doncaster Woodlands Scout Hut approximately 950m to the southwest, and PETmedic Veterinary Services approximately 670m to the west. There are also several pubs to the west of the site within the town of Adwick Le Street. These receptors have not been identified as sensitive due to them being located beyond 500m of the site, therefore being at very low risk of impact from potential dust emitted from the site.

There are no other expected emissions to be produced on site besides dust. The operations on site will not cause the receptors positioned further away from the site to be given greater consideration in terms of dust impacts. There are no factors that would cause a receptor close to the site not to be

considered a receptor. There are however other sources of dust close to some of the receptors, including a stone cutter facility, a trucking company, a tyre shop and the Adwick Railway line. Detail on the other potential local sources of dust is given in Table 1.2.

A wind rose from the weather station Adwick Le Street, shown in Figure 1.2, indicates that the prevailing winds blow from the east, with gusts also coming from the northeast. This suggests that the receptors situated to the west of the site will be most impacted by potential dust.

Figure 1.1 Nearby Sensitive Receptors



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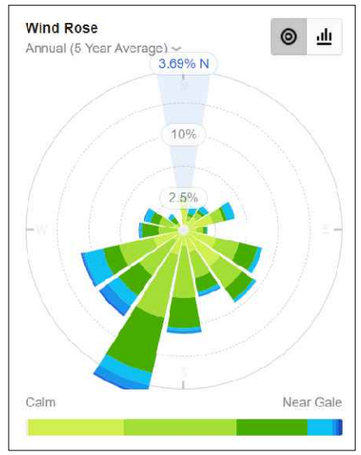


- Residential
- Commercial / Industrial
- Road
- Rail

CLIENT
Northern Refine

SITE
Unit 28 Victoria Road,
Adwick Le Street
Doncaster
DN6 7AZ

REV	DATE	DETAIL

PROJECT
Permit Application

TITLE
Key Receptor Plan

SCALE @A3	DATE	DRAWN BY	CHECKED BY
1:10000	May 2022	T Kearns	D Alcock

	DRAWING NO	REVISION
	220622NR103	

Figure 1.2 Wind Rose showing the wind direction and strength at Northern Refine Ltd

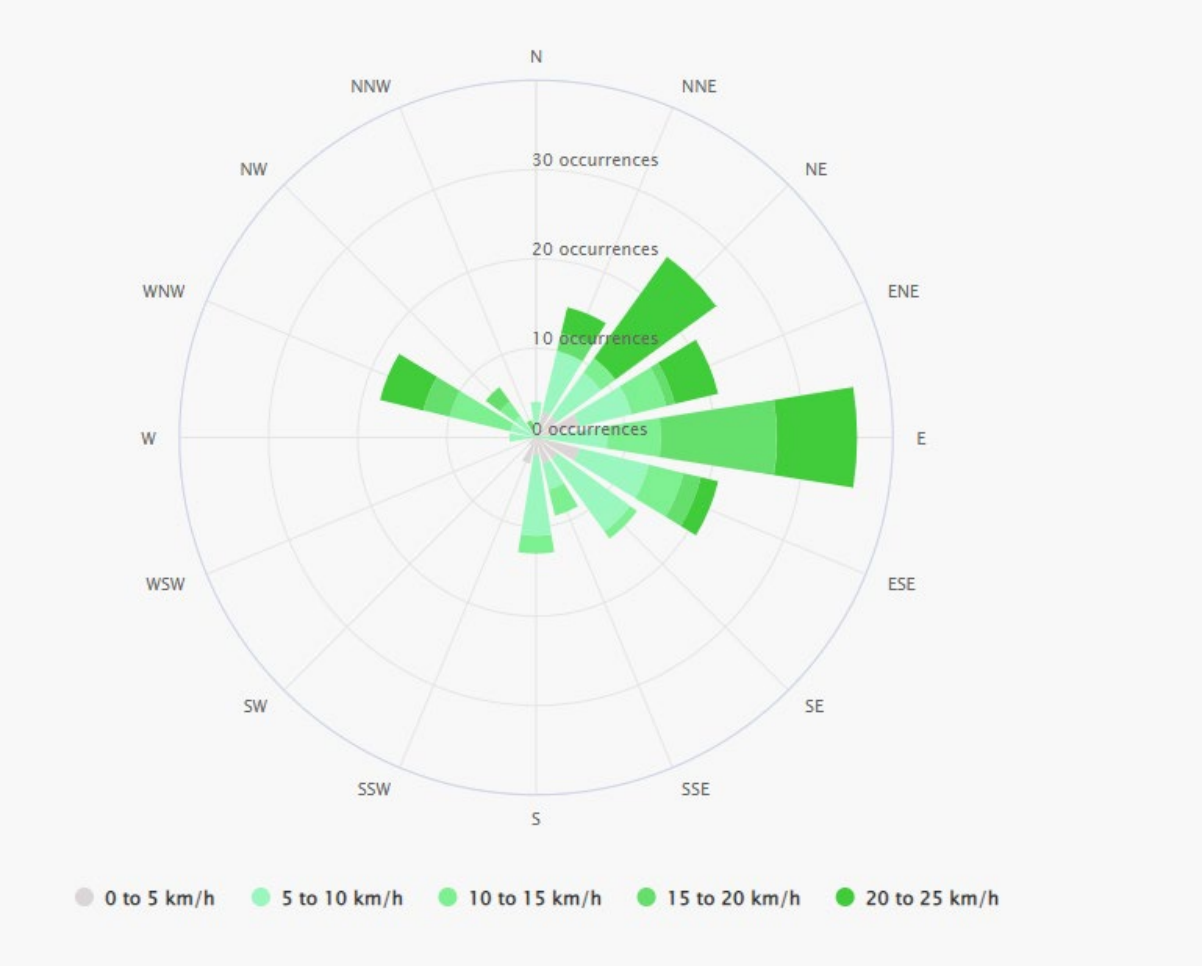


Table 1.1 Distances to Selected, Representative Sensitive Locations

Boundary	**Closest Property**	**Approximate Distance to Northern Refine Ltd (m)**
Southwest	Residential properties on Doncaster Lane	410
Southwest	Residential properties in Adwick Le Street	410 – 1000
West	PETmedic Veterinary Services	670
Southwest	Adwick Le Street Cricket Club	810
Southwest	Doncaster Woodlands Scout Hut	950

Table 1.2 Sources of Dust and/or other Emissions

Company	**Address**	**Type of Business**	**Distance from Northern Refine Ltd (m)**
Adwick Aggregates	Edward Road, Adwick le Street, Doncaster	Stone Cutter	30
Northern Frames	Edward Road, Adwick le Street, Doncaster	Conservatory Supply & Installation	65
Caroline's Fabrics	Unit 8c, Victoria Road Industrial Estate	Textile Merchant	80
Jack Richards Adwick Depot	Adwick le Street, Doncaster	Vehicle Storage Facility	115
Junction 38 Pallets	Victoria Rd, Adwick le Street, Doncaster	Woodworking Supply Shop	95
The Testing Lab PLC	Unit 4 James Rd, Adwick le Street, Doncaster	Asbestos Testing Service	160
Proweld Welding Supplies Ltd	James Road, Adwick le Street, Doncaster	Welding Supply Shop	190
Asbestos Surveyors	James Road, Adwick le Street, Doncaster	Asbestos Surveyor	200
Nationwide Bearing Co Ltd	James Road, Adwick le Street, Doncaster	Engineer	215
Planet Park	Planet Road, Adwick le Street, Doncaster	Trucking Company, Tyre Shop, Scrap Yard	230
Tony's Tyres	Alexandra Road, Adwick le Street, Doncaster	Tyre Shop	95
Adwick Railway Line	n/a	Railway	270
Specialist Automotive Products Ltd	Unit 13 Wellsyke Industrial Estate, Bentley Moor Lane, Adwick le Street, Doncaster	Vehicle Repair Shop	780

Danum Powder Coating Ltd	7 Holmeroyd Road, Adwick le Street, Doncaster	Powder Coating Service	530
GLP Motorcare Ltd	10, Bentley Moor Lane, Adwick le Street, Doncaster	Vehicle Repair Shop	705
M X 5 Motors	Unit 1 Bentley Moor Lane, Adwick le Street, Doncaster	Vehicle Repair Shop	670
DFS Northern Upholstery	Bentley Moor Lane, Adwick le Street, Doncaster	Manufacturer	540
Darren Ray Car Repairs	1C Brooklands Road, Adwick le Street, Doncaster	Vehicle Repair Shop	370
PMF Products Ltd	Carcroft Enterprise Park, Carcroft, Doncaster	Manufacturer	700

2. OPERATIONS AT NORTHERN REFINE LTD

2.1 Waste Deliveries to Northern Refine Ltd

Wastes are brought to the site by the site's own transit vans and occasionally 3rd party contractor vehicles, therefore checks are undertaken by staff to ensure the suitability of the wastes accepted and can begin at the client's site prior to pick up. The types of vehicles used consist of transit vans which will be Tier 4 emissions rated and keep the waste loads fully enclosed within the trailers. Further detail on the waste accepted on site, the onsite processes and their destinations within the facility are shown in Table 2.1 and Figure 2.1. The site will accept deliveries of waste between the hours of 07.00 – 18.00 Monday to Friday and between 07.00 and 14.00 on Saturdays.

Drivers are required to inspect loads prior to uplift and the checks include load security, potentially dangerous wastes, and hot loads. If a load is deemed to present a risk, then the driver reports this to site management who will advise the customer that the load cannot be collected and the reasons for that.

Loads are also inspected at the site by site staff prior to tipping. Loads being tipped are also supervised so that any issues which were hidden and not identified prior to tipping can be seen. The aim of this is to ensure that a problematic load is not tipped and allowed to stand for a period of time, potentially allowing dust and emissions to accumulate. Prior to tipping an accepted load, the load will be dampened down with the hose outside the permitted area to reduce the risk of dust becoming airborne and being carried on the breeze. Loads are inspected to ensure the following criteria is met:

i) EWC Code on the waste transfer note conforms to the waste inside the container.
ii) Permit waste acceptance criteria – waste meets with the criteria of the environmental permit and the planning permission for example, waste accepted would be within the permissible tonnage and waste type acceptance criteria.
iii) The waste is not odorous – waste is likely to be odorous if it has elements of putrescible waste and food residue.

If an issue is identified at the site with non-conforming waste, the load shall be transferred to the quarantine area and site management alerted. Action taken may be to segregate and remove the problematic waste to a secure area or to sort the load, removing acceptable waste to recycling and to invite suitable qualified contractors to collect the problematic waste.

A driver induction will be conducted, and this briefing includes information on dust mitigation. Waste will only be accepted on site where the waste has been pre-booked with the office staff. Waste accepted onto the site from 3rd parties will be visually inspected upon reception to the site in order to

ensure that the waste is compliant with the site's permitted waste types and EWC Code description given by the produce/holder as listed on the waste transfer description.

Any wastes that do not comply with the site's permitted waste types shall be reloaded, rejected, and recorded in the rejection log.

In terms of records, Duty of Care notes, Waste Transfer notes are all kept. Additionally, input records consisting of EWC Codes as well as the source and quantity of the waste received will also be kept.

2.2 Overview of Waste Processing Dust, and Other Emission Controls

All operations will be carried out within the industrial unit building. The unit has one roller shutter door to the north of the site. This roller shutter door will be closed at all times outside of deliveries and vehicles and mobile plant outgoing in order to contain any potential accumulation of dust within the Unit and prevent the spread of dust to neighbouring properties. The entire site has an impermeable concrete surface under the original planning permission. The concrete surface will be cleaned consistently in accordance with the cleaning schedule provided in Appendix B using the industrial vacuum with HEPA filters, two mobile dust collectors, and using manual or mechanical sweepers when there is the visible accumulation of dust or immediately following an incident. The site access roads are constructed of tarmac which allows easy and efficient removal of potential dust accumulations.

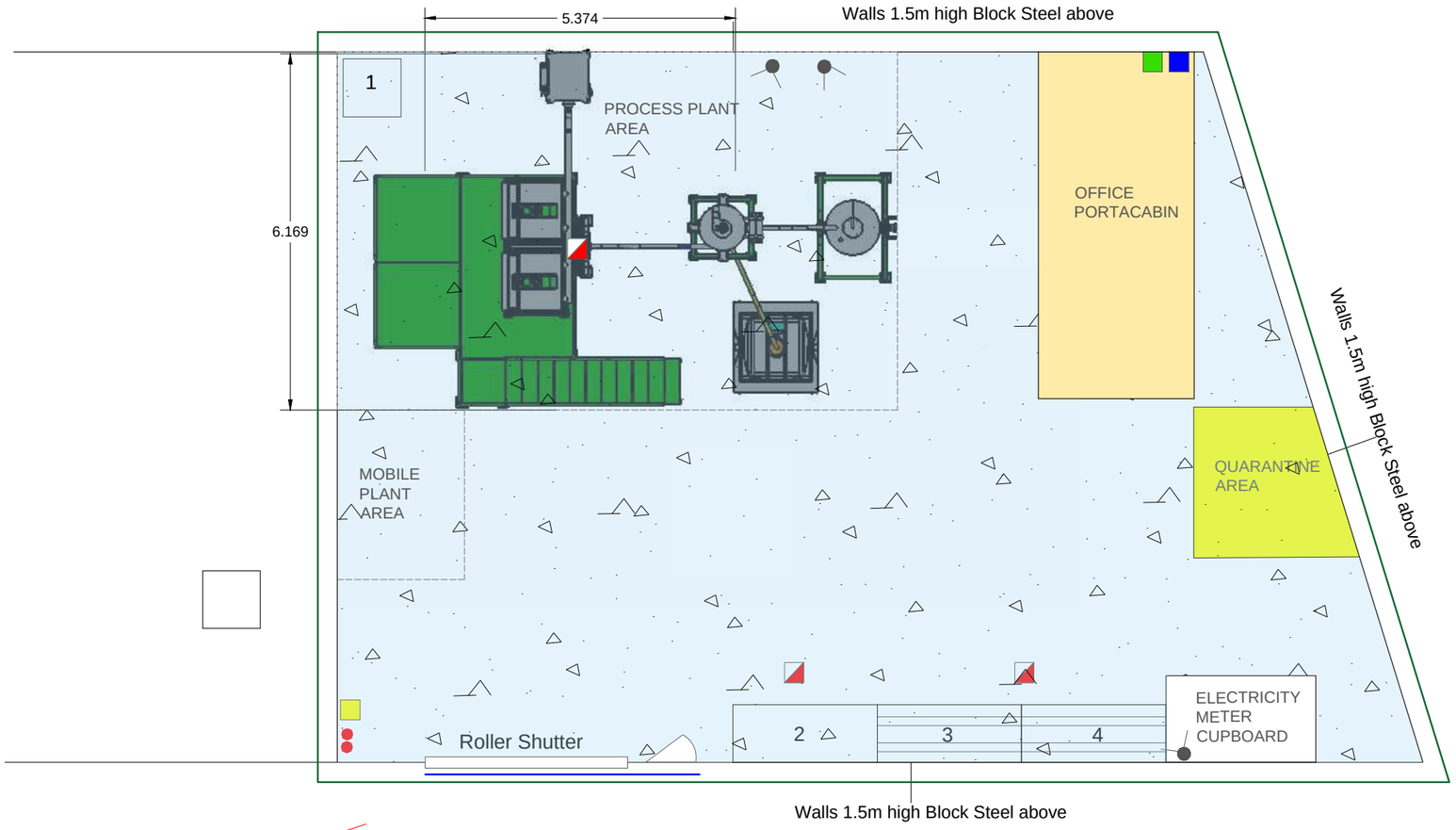
There are several locations within the permitted area for the processing and storage of waste according to waste stream. Further information can be found in table 2.1 below.

Table 2.1 Typical Waste Types Brought to Northern Refine Ltd

General Waste Type	Process	Destination with the facility
CATs	Hand picking and sorting of recyclables from input waste with the assistance of mobile plant. Steel CATs will be bagged immediately. Ceramic CATs will be transferred to the process area to be processed.	Input waste sorted immediately upon arrival. Steel CATs will be bagged immediately. Ceramic CATs will be transferred to the processing machinery to be processed. All bagged product stored on concrete surface or racking to north of site.

Figure 2.1 Site Layout Plan showing the destinations of the onsite processes

1. Battery Box - Shells = $1m^3$
2. Bagged Products = 2.5 x 1 x 1 = $2m^3$
3. Bagged Products on 3 stage racking = 3 x 2.5 x 1 x 1 = $7.5m^3$
4. Bagged Products on 3 stage racking = 3 x 2.5 x 1 x 1 = $7.5m^3$



Fire Hydrant approx 40m *(see drawing 220622NR102)*

0 1 2.5 5
scale (meters)

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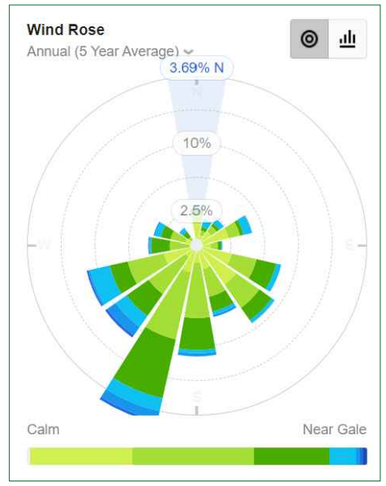

- Quarantine area
- Concrete Surface
- Covered Building
- PPE Storage
- Spill Kit
- Hydrosnake storage
- Hydrosnake deployment
- CCTV
- Automatic Fire Extinguisher
- Fire Extinguisher

CLIENT: Northern Refine

SITE: Unit 28 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ

REV	DATE	DETAIL

PROJECT: Permit Application

TITLE: Fire Prevention Plan

SCALE @A3	DATE	DRAWN BY	CHECKED BY
1:100	June 2022	T Kearns	D Alcock

DRAWING NO: 220622NR101

REVISION:

Northern Refine Ltd is seeking to obtain a bespoke environmental permit to operate a Catalytic Converter (CAT) centre at Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ. The permitted area will be a small-scale operation situated within an industrial unit that will store and treat CATs. A maximum of 500 tonnes of CATs will be accepted per annum, and it is expected that 1-2 tonnes per day will be accepted on average.

The permitted area comprises of a small unit building which will house all site operations. There is one roller shutter doors on the northern boundary which will remain closed at all times deemed appropriate. The unit consists of an office portacabin, quarantine area, mobile plant storage area, process plant area, a battery box for the secure storage of CAT shells, and storage for bagged CAT products on the northern boundary. The process plant area consists of a shear and hopper for the processing of ceramic CATs. The site has an existing concrete surface.

CATs will be brought on to site mainly by Norther Refine's own vehicles and occasionally through third party contractor vehicles, and will be delivered directly to the roller shutter door for immediate visual inspection and sortation. CATs will be sorted between those with a steel and those with a ceramic internal matrix.

Steel CATs will be bagged and stored pending dispatch to a suitable recycler. Ceramic CATs will be transferred to the process area where they will be 'de-canned' using a shear. The internal matric will then be placed into a hopper and milled to produce powder which will be stored in sealed bags. The powder is then dispatched to a refinery where the precious metals in the CAT are recovered. These materials are defined as product and not waste once processed.

CAT shells will be stored within the Cemo 610L or similarly approved battery disposal box in the south eastern corner of the site.

All material on site, including the CAT shells and the product stored in sealed bags, is classed as hazardous material. Due to the materials on site being hazardous, they are classed as high risk material and therefore will be removed from site within 7 days.

2.3 Mobile Plant and Equipment

Nitrogen Dioxide gas is a by-product of internal combustion engines and the site uses several items of plant with internal combustion engines. The following table lists the type of and emission ratings for the mobile plant and equipment used on site:

Description	Make	Emission Rating
Forklift Truck	Linde E12	Tier 4

Plant machinery will be maintained by the supplier and will be serviced in accordance with the manufacturer's specifications and recommendations with a LOLER being performed annually. Plant will be cleaned down at the end of the working week. Defect checks will be performed daily by the user of the plant machinery and any defects noted will be recorded on the defect form and the repair will be arranged with the supplier.

In the event of a breakdown, either of vehicles, plant or machinery, a contingency process is followed which involves options such as fixing the item internally, covering the broken down item with a replacement, hiring a supplier to fix the item and renting additional equipment. If not of these options are suitable, operations may have to cease on site and the relevant affected parties will be contacted immediately with a date of when operations can continue.

If replaced, the item will be replaced with the lowest emissions standard possible at the time of purchase. Both ultra-low and low sulphur fuels are used. Breakdowns will be recorded, and the Environment Agency will be contacted with the nature of the problem and when it is expected for the site to return to normal operations.

Staff are trained on induction and are given refresher training at least annually via toolbox talks. Visitor driver inductions are given to inform them of all dust mitigation measures they can undertake. Control measures in place to reduce emissions include the strong enforcement of a ban on idling site vehicles and plant.

3. DUST AND PARTICILATE (PM_{10}) MANAGEMENT

3.1 Responsibility for Implementation of the DEMP

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

Daily records will be kept at the start of operations and again in the middle of the working day. The records will be kept on site for a minimum of two years and will be made available on request for inspection by the relevant authorities including Doncaster Council.

Staff at all levels will receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions. Particular emphasis will be given to plant and equipment malfunctions and abnormal conditions Staff are trained on induction and given training at least annually via toolbox talks.

The Site Manager will ensure that external hauliers and other visitors are aware of the need to comply with the provisions of this plan so far as they are relevant to their activities on site.

Any member of staff who fails to comply with the provisions of the DEMP will be re-trained, as necessary. External hauliers and other visitors failing to observe the requirement of the plan will be asked to leave the site.

The DEMP will be reviewed annually or in response to an incident.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

3.2.1 Sources of Potential Emissions

The principal dust sources anticipated would be from waste processing, loading, and unloading operations, and site transport, which may also raise visible dust.

The main site operations with the highest risk of producing dusts is the use of machinery for the processing of the ceramic CATs including a shear and hopper. However, it is crucial to note that all processing occurs indoors within the industrial unit building and mitigation measures, such as the regular use of the industrial vacuum with extraction HEPA filters fitted in the bags, two mobile dust collectors, and the permanent dust extraction system fitted to the processing machinery, will be in place consistently. Undertaking all operations indoors significantly reduces the risk of potential accumulations of dust being blown off site to neighbouring properties. It is also crucial to note that

any visible accumulations of dust will be highly valuable to the company due to the dust containing precious metals from the 'de-canning' of the CATs.

As shown in Figure 1.2, the prevailing winds blow from the east, with gusts also coming from the northeast. This shows that the wind blows towards the receptors to the west.

Below, Table 3.1 details the potential sources of dust from operations being undertaken on site and their pathways, receptors, and suitable mitigation measures.

Table 3.1 Source-Pathway-Receptor routes for dust producing operations on site,

Source	Pathway	Receptor	Mitigation
Vehicles entering and/or leaving the site with mud on wheels and tracking dust on to or off the site.	Tracking of mud and dust onto public highway and subsequent atmospheric dispersion.	All	Site based manual or 3rd party mechanical sweepers used to clean the highway when accumulation of mud and dust is visible. The site is fully enclosed indoors and has a fully concreted surface, making it easy to clean, therefore preventing potential material from being transferred to the public highway by vehicles.
Debris falling off vehicles that arrive uncovered.	Tracking of debris on to the site from external vehicles and subsequent atmospheric dispersion.	All	All vehicles used consist of transit vans and therefore waste will be enclosed at all times during transit. Consistent sweeping of the site surface when accumulation of debris is visible. The site has a fully concreted surface, making it easy to clean, therefore preventing potential material from being transferred to the public highway by vehicles.
Vehicles and plant moving around the site kicking up dust.	Atmospheric dispersion from the movement of vehicles around the site.	All	The site is entirely enclosed indoors. All vehicles and plant only operate on the concrete surface. Site speed limit is strictly set to 5mph and vehicle idling is prohibited. Consistent sweeping and cleaning of concrete

			surface. Operations will cease in windy weather where airborne dust is visible. The site has a fully concreted surface, making it easy to clean, therefore preventing potential material from being transferred to the public highway by vehicles.
Windblown dust from exposed stockpiles	Atmospheric dispersion	All	The permitted area is entirely indoors. Enclosing all stockpiles within the building. All stockpiles are sealed in bags or within the sealed battery box. The site has a fully concreted surface, making it easy to clean, therefore preventing potential material from accumulating and being windblown outside the permitted area.
Processing machinery e.g., shear, hopper	Atmospheric dispersion	All	All machinery and associated plant is operated on the concrete surface enclosed within the building. Onsite industrial vacuum and mobile dust collectors used alongside the dust extraction system installed on the processing machinery to consistently collect any accumulations of precious metal dust. Operations will cease in windy weather where airborne dust is visible. It is crucial to note however, that all processing and stockpile storage is enclosed within the building.
Site surface	Wind-whipping of surface dust and subsequent	All	Site speed limit is strictly set to 5mph limiting wind-whipping from vehicles. Industrial vacuum and mobile dust

	atmospheric dispersion		collectors used to clear concrete surfaces. Concrete surfaces make them easy to consistently sweep during cleaning regime when accumulation of dust is visible. It is crucial to note however, that all processing and stockpile storage is enclosed within the building.
Loading material back onto vehicles	Atmospheric dispersion	All	Vacuuming down vehicles before they exit the site if there is visible accumulation of debris. All material is sealed in bags or in a battery box. Operations will cease in windy weather where airborne dust is visible.
Particulate emissions from the exhaust of vehicles/plant/ Machinery on site	Atmospheric dispersion	All	Site speed limit is strictly set to 5mph and vehicle idling is prohibited. The use of low sulphur fuels and downward facing exhausts/blow off valves.
Generators, plant, and other non-road going mobile machinery	Atmospheric dispersion	All	Site speed limit is strictly set to 5mph and vehicle idling is prohibited. Consistent sweeping as part of a cleaning regime when accumulation of dust is visible.

3.2.2 Controls

The operations will be governed by the conditions within the planning permission which may be granted. The following means of prevention are based on existing site management procedures and the planning permission guidance.

Relevant parts of current best practice for minerals can also be taken to apply to waste management and processing operations and will be referred to as appropriate. The essence of guidance for the minerals industry is that dust impacts can be controlled by effective site management.

Weather Conditions

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

A propriety windstock will be obtained and installed. This will provide a ready indication of the approximate wind strength and will show the direction in which any airborne dust is likely to be carried.

A trigger system will be adopted to identify those weather conditions when there is an increased or high risk of windblown dust. The trigger levels are detailed in the following matrix.

Table 3.2 Wind-blown dust matrix

Wind Speed			**Rainfall**		
Beaufort	ms-1	mph	Dry	Light showers	Heavy rain
5 +	8 +	18 +	Red	Red	Amber
3 – 4	3 – 8	8 – 17	Red	Amber	Green
1 - 2	0 - 3	1 - 7	Amber	Green	Green

The trigger levels will be interpreted as follows:

- Green: Wind-blown dust not normally likely to occur in significant quantities – normal dust suppression measures to be employed;
- Amber: Increased risk of wind-blown dust – additional checks on downwind boundary for visible dust – stockpiles will be inspected and treated as necessary in accordance with management relating to wind-blown dust across stockpiles; and
- Red: High risk of wind-blown dust – no dusty activities to take place if winds blow from the south west or south east – stockpiles will be inspected and treated as necessary in accordance with management relating to wind-blown dust across stockpiles.

When “red” conditions occur, and the wind blows from the southwest or southeast, all outdoor, dust generating operations will be immediately suspended.

Loading and Unloading

Waste will be delivered by the company’s own transit vans and occasionally third party contractor vehicles directly to site where it is immediately inspected. Following inspection, steel CATs are separated from ceramic CATs. Members of staff with the assistance of the forklifts will unload the loads into the building prior to processing / storage. There will be no tipping activity, therefore significantly reducing the risk of the spread of dust. Routine vacuuming and dust collecting of site surfaces will take place to reduce dust emissions when the material slumps.

Site Traffic

All site traffic will keep to designated routes. The designated routes will be vacuumed using the onsite industrial vacuum and two mobile dust collectors, and will be swept where accumulations of dust are visible remove any loose materials.

Standard good practice will be adopted for site traffic, including:

- Avoiding abrupt changes in alignment;
- Regular clearing, wetting and maintenance of yard surfaces;
- Setting site speed limit strictly to 5mph;
- Fitting site plant with upswept exhausts and radiator fan shields;
- Evenly loading vehicles to avoid spillages; and
- Regular application of water in dry conditions

Road Transport

All vehicles carrying material into or out of the site will consist of transit vans which ensure the CATs are enclosed when arriving on site. The wheels, chassis, and under-bodies of departing vehicles will be cleaned and further inspected by the driver before proceeding towards the site entrance. An industrial vacuum and two mobile dust collectors will be provided for this purpose.

All site surfaces will be continuously vacuumed in particular conditions such as dry, hot, or windy weather or when accumulations of dust are visible through the use of the onsite industrial vacuum and mobile dust collectors. It is crucial to note that all processing and material storage will occur enclosed indoors within the building. All stockpiles are either sealed in bags or sealed in the battery box. The concrete surfaces will be cleaned consistently during operational hours in accordance with the cleaning schedule provided in Appendix B. A speed limit of 5mph will be set on site.

The site entrance will be inspected daily to ensure that track-out is not carried out onto the public highway. A road sweeper will be deployed when accumulations of dust are visible to remove any muddy or loose deposits.

Wind-blown across stockpiles and loose materials

Material stockpile areas will be clearly designated and are located indoors within the building, therefore significantly reducing the exposure to wind. Loose materials both inside and outside these designated areas will be swept to minimise generation of wind-blown dust.

Other Matters

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

- High standards of housekeeping to minimise track-out and wind-blown dust;
- The use of the industrial vacuum with HEPA filters and mobile dust collectors to avoid re-circulating fine material; and
- Effective staff training in respect of the causes and prevention of unacceptable emissions of dust.

The water supply to the dust suppression installations will be protected against frost to ensure availability at all times.

3.2.3 Maintenance

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

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

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

Table 3.2 Measures that will be used on site control dust/particulates (PM_{10}) and other emissions

Abatement Measure	Description/Effect	Overall consideration and implementation	Trigger for implementation
Preventative Measures			
Site / process layout in relation to receptors	The location chosen for the development of the operation is as far as is reasonably practical from local sensitive receptors as can be designed.	Easy to implement as part of good practice. Site activities are strategically positioned to lower the risk of adverse impact on surrounding receptors.	This measure will be used the entire time that the site is operational.
Enclosing all processing operations and stockpiles indoors within the building.	Undertaking all waste processing indoors and storing all waste and product stockpiles indoors significantly reduces the exposure to wind, and therefore significantly reduces the risk of wind whipping and the spread of dust to neighbouring properties.	Easy to implement as part of good practice. The building is of appropriate nature and scale to undertake industrial style operations within.	This measure will be used the entire time that the site is operational.
Site speed limit, 'no idling' policy and minimisation of vehicle movement on site	The speed limit on site is 5 mph. Reducing vehicle movements and idling should reduce emissions from vehicles. Procurement policy to only purchase clean burn road vehicles and non-road	Easy to implement as part of good practice. Drivers are inducted onto site and speed limits are strictly enforced by site management.	Speed limit are in place at all times. Failure to comply with speed limits shall be a disciplinary matter for Staff and cause other drivers to be banned from the site.

	going mobile machinery. Enforcement of speed limit reduces re-suspension by vehicle wheels.		
Minimising drop heights for waste	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.	Easy to implement as part of good practice.	Site staff are trained in the various dust mitigation measures required on site. This is done at induction and reinforced through annual toolbox talks. Any changes to the DEMP are also introduced to staff via toolbox talks.
Good house-keeping	Having a consistent, regular housekeeping regime that is supported by management, will ensure site is regularly checked and issues remedied to prevent and remove dust and particulate build up. A cleaning schedule is in place to ensure that any accumulations of dust that do occur are removed weekly. A copy of the cleaning schedule can be found in Appendix B.	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. Site management are responsible for ensuring that inspections take place and cleaning is undertaken in compliance with the schedule.	This measure will be used the entire time that the site is operational.

Ceasing operation during high winds and/or prevailing wind direction	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.	Likely to reduce dust and particulate emissions, however, not a long-term solution.	This measure will be used the entire time the site is operational. It is crucial to note that all operations occur enclosed indoors.
Mechanical sweeper to remove any material spread by vehicle wheels.	A mechanical sweeper will be used to clear any visible deposits made by vehicle wheels from the concrete surface of the site roads.	Easy to implement as part of good practice.	This measure will be implemented in response to observations of accumulations of dust or mud on site roads. In the event that a sweeper cannot be deployed, site management shall consider the potential for dusts to be raised from vehicles travelling on site roads, the potential for dust/mud to be taken off-site onto the public highway or for dusts to be created by vehicles operating on site roads and in the event that any of these situations occur, shall suspend inputs to the site until mitigation measures and normal conditions can be restored.
Easy to clean concrete impermeable surfaces	Creating an easy to clean impermeable surface, using materials such as concrete as	Considered good overall based on dust and particulate reduction but potentially costly and	This measure will be used the entire time that the site is operational. Cleaning will be undertaken in

	opposed to unmade (rocky or muddy) ground within the site. This will reduce the amount of dust and particulates generated at ground level by vehicles and site activities.	disruptive to retrofit. There are maintenance and cleaning procedures in place for the concrete surfaces.	accordance with the cleaning regime.
Minimisation of waste storage heights and volumes on site	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. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	Likely minimal return on potentially costly layout changes. The amount of waste that can be managed on site without causing dust and particulate pollution should be identified in the management system.	This measure will be used the entire time that the site is operational.
Remedial Measures			
On site sweeping	Road sweeping vehicles dampen down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside. Sweepers shall be hired in as required.	A mechanical sweeper will be used to clear visible accumulations of dust and mud. Manual sweeping and cleaning within the building is a daily activity carried out in accordance with a schedule.	This measure will be used when there is the visual build-up of dust during inspection and in compliance with the cleaning regime.

Dust extraction system installed on the processing machinery	Dust extraction system will be operational at all times that the processing machinery is operational, ensuring that all dust produced during these activities is removed from surfaces and the air.	The processing machinery will not be operational without the dust extraction system working alongside it. This will significantly reduce the risk of the spread of dust from the processing plant and the treatment activities.	This measure will be used the entire time that the site is operational.
Industrial vacuum with extraction HEPA filters fitted to the bags, and two mobile dust collectors	Industrial vacuum and mobile dust collectors will be used immediately when the accumulations of dust become visible within the permitted area to collect valuable dust containing precious metals. The use of the industrial vacuum and dust collectors will significantly reduce the risk of the spread of dust outside of the permitted area.	The industrial vacuum and dust collectors will be present on site at all times and will be used continuously throughout the working day by site staff when the accumulation of dust is visible. Bags of dust from the vacuum and collectors will be sealed as product and assigned to the northern product storage area pending removal to a suitable permitted facility.	This measure will be used the entire time that the site is operational.

3.3 Other Considerations

Water usage / availability:

There may be the occasional use of a mains water hose (in the yard outside the permitted area) that will only produce a maximum volume possible of a single tap. If this is insufficient in mitigating onsite dust, then the site will cease operations. However, with the permanent use of the dust extraction system which will operate in sync with the processing machinery at all times, and the industrial

vacuum and mobile dust collectors which will be used continuously on site, it is unlikely that the hose outside the permitted area will be required. As stated previously, all materials are stored indoors in sealed bags or the sealed battery box. The roller shutter door will remain closed at all times aside from receiving deliveries.

In the event of a drought:

As mentioned above, in event of a drought, a mains water hose will be used to dampen stockpiles and site surfaces in order to reduce the spread of dust. However, with the permanent use of the dust extraction system which will operate in sync with the processing machinery at all times, and the industrial vacuum and mobile dust collectors which will be used continuously on site, it is unlikely that water based dust suppression will be required.

3.4 Enclosure of Waste Processing & Storage Areas

It is crucial to note that all waste processing is enclosed indoors within the building. There are designated areas for processing and storage as shown on Drawing Ref: 220622NR101. There is one roller shutter door to the north of the site which will be closed at all times outside of deliveries.

3.5 Visual Dust Monitoring

Activities that have the potential to cause dust emissions, as detailed in Section 3.2, will be monitored at the start-up of operations and again during the working day. This will include a visual assessment of any impacts beyond the downwind site boundary. Regular site inspections will also be undertaken by a COTC holder.

All observations and findings, including wind and other weather conditions, will be noted in the daily records.

Should visible dust be generated, the Site Manager will act promptly to identify the sources of dust and take the necessary corrective action. Each event, its cause and the action taken will be noted in the daily records. Formal reporting of dust incidents will be recorded in the site incident log, and any offsite notifications of dust shall be considered as complaints.

If necessary, to avoid potential nuisance, the Site Manager will instruct the reduction or suspension of any operation or process causing visible dust emissions across the site boundary towards any sensitive receptor until the emissions can be controlled.

All site personnel will be instructed to inform the Site Manager whenever visible dust emissions are observed, or appear likely to occur, as a result of any operation or process.

4. PARTICULATE MATTER MONITORING

Reference to the AQMA interactive map from DEFRA indicates that the site is not within an Air Quality Management Area.

5. ACTIONS WHEN AN INCIDENT OF DUST IS REPORTED

The following actions are taken:

1. The Site Manager assesses yard activities and the nature of waste handling and deliveries immediately prior to the incident being reported, to work out the cause.
2. If the source cannot be ascertained with 100% confidence, the Site Foreman on duty suspends the likely dust/particulate generating activities.
3. If the source is within the site's control, the Site Foreman on duty takes appropriate action in terms of dust/particulate abatement, to ensure that the alarm is not re-activated. This may take the form of the following:

a) Investigating the source of the dust/particulates to prevent a re-occurrence.
b) Suspending operations which are not being conducted using best-practice controls as set out in Table 3.1.
c) Additional use of the dust abatement measures.
d) Logging findings of a – c in the site diary, and also in the reporting template within the relevant appendix of the Environmental Permit.

If an effective abatement technique cannot be identified and implemented, and dust levels remain visible at the site boundary, then operations should be suspended.

In all cases, any new "lessons learnt" from the Site Manager's investigations are considered by the company directors and implemented into dust & particulate emission management plan (if not already included), to prevent a re-occurrence of the incident.

6. REPORTING AND COMPLAINTS RESPONSE

In line with the Site Management Plan, a complaints form will be completed for every complaint received about Northern Refine Ltd. All complaints will be recorded in a complaint register, a copy of which is attached in Appendix A. These records will be stored on file for a period of 6 years. In the event of a dust complaint, the complaint will be investigated with immediate effect and the Environment Agency will be informed to assist within the investigation. A record of all copies of correspondence and telephone file notes will be made in the complaints register.

Relevant authorities e.g. Doncaster Council will be notified by e-mail or phone call on the day that the complaint is made, and will be informed on the identity/location of the complaint, the description of the dust complaint and the details of the findings of Northern Refine's management investigations as regards to the source of the dust and what corrective action has been taken.

In the event of any substantiated complaint, the effectiveness of the DEMP will be reviewed.

6.1 Reporting Complaints

The site operates a in accordance with an Environmental Management System Ref: NR.PT.EMS.2208.

6.2 Management Responsibilities

Site management will alter Company Directors of any complaints in accordance with the equality system. Complaints registered will be discussed at monthly management meetings and any trends will be analysed. The monthly management meetings will instigate further remedial measures including reviews of the DEMP in response to any issues arising.

6.3 Complaints Procedure

In the event of a complaint, site management will respond to the complaint within 24 hours. The person/organisation that issued the complaint will be contacted within 24 hours of the site receiving the complaint to ensure that they are aware that the matter is being addressed and taken seriously.

In the event that a number of complaints are received, the complaints and trends will be discussed at management meetings. Consideration will be given to the causes of the complaint. A full review of all procedures and plans will be carried out to address any identified causes of the complaints.

If complaints are received from several sources, site management will carry out an off-site and on-site investigation to identify the nature, severity, and cause of the issue. If, in the opinion of site management, that no immediate practical action can be taken to mitigate the issue and the issue is sufficiently serious as to constitute pollution, then this would be escalated up to the Directors. The

Directors would then take a view on whether operations should be suspended in order to deal with the immediate situation.

The site has been designed and will be operated to ensure that there would be no impact on neighbouring properties. However, should the neighbouring businesses, the regulator or local residents request regular liaison meetings, a liaison committee would be created and any such committee would be free to decide the members and frequency of meetings.

7. SUMMARY

This DEMP has been produced on behalf of Northern Refine Ltd in order for the site to meet the requirements of and reassure the Environment Agency that the potential for dust produced from the site's operations is mitigated and controlled in every possible way. The aim is to be issued a bespoke environmental permit to allow for a Catalytic Converter (CAT) centre at Unit 11 Victoria Road, Adwick Le Street, Doncaster, DN6 7AZ.

The DEMP aims to control any potential sources of dust to prevent dust emission impacts on the surrounding receptors, including several that are sensitive. All possible source-pathway-receptor routes have been identified and suitable abatement measures have been assigned to each one to minimise the potential dust caused from onsite operations.

The DEMP will be reviewed annually to ensure it is up to date or following a dust incident by the ineffectiveness of the plan.

APPENDIX A – DUST COMPLAINT FORM

Customer Details	
Customer Name -	
Address – **Postcode -**	
Customer Contact Details -	
Tel -	
Email -	
Date -	
Complaint Ref Number -	
Complaint Details -	

Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Weather conditions -	
Wind direction and speed -	
Investigation findings -	
Feedback given to Environment Agency and/or local authority -	
Date feedback given -	
Feedback given to public -	
Date feedback given -	
Review and Improve	
Improvements needed to	

prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
If different insert reason for delay -	
Does the dust management plan need to be updated -	
Date that the dust management plan was updated -	
Closure	
Site manager review date	
Site manager signature to confirm no further action required	

APPENDIX B – CLEANING SCHEDULE

Area	Northern Refine Ltd						
	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Site Surfaces							
Access Roads							
Mobile Plant							

APPENDIX C – VISUAL MONITORING CHECK SHEET

Name:	**Date:**	**Time:**
Weather	Wind strength / direction	
	Conditions e.g. dry, showers	

Location of visible accumulation of dust	**Time**	**Visible Dust**	**Dust Mitigation Action**
Access road surface			
Internal surface of building			
Airborne			
Stockpiles			

APPENDIX D – RECORD OF ACTIONS

Name:	**Date:**	**Time:**
Location of visible accumulation of dust	**Dust control measure used**	✓ **or** ×
Access Road Surface	Mechanical sweepers	
Internal surface of building	Manual sweeper	
	Industrial vacuum and mobile dust collectors for when accumulations of dust become visible on surfaces	
	Dust extraction system used in sync with processing machinery	
Airborne	Dust extraction system to immediately remove airbourne dust	
	Extreme circumstances: cease operations immediately	
Stockpiles	Product sealed in bags	
	Shells sealed in the battery box	
	Industrial vacuum and mobile dust collectors used when accumulations of dust become visible on surfaces.	

APPENDIX E – INDUSTRIAL VACUUM SPECIFICATIONS

230v Big Brute HEPA

H13 HEPA Cartridge and Housing Connection Hose

Special HEPA 4 Wheel Trolley Easy Empty Lift out Drum

V39 Standard round Filter

Suck & Blow 230v Power Unit

APPENDIX F – DUST COLLECTOR SPECIFICATIONS

Cleaning System: Jet-Pulse Automatic

Number of Filter Elements: 2 pcs

Pulse Valve: 2 Pieces - 1" TURBO

Engine: 1.1 kW - 3000 rpm - IE3

Net Filter Area: 20 m^2

Filter Media: polyMIGHT 65

Fluid Temperature: max. 120 C

Suction Capacity: 2.000 m^3/h