

Management Plan

Odour – Holmfirth Dyers Limited

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Document control

Role	Responsibility
Group Risk & Compliance Manager	Originator, Reviewer
Commercial Director	Approver

Revision	Date	Summary	Status
R.01	27/05/2022	Originated	Draft

This is a working document that will be reviewed at least every two years to ensure that it remains relevant to site operations and to determine whether further controls or improvements can be implemented.

The plan will be reviewed in the event of any substantiated odour complaints, or if a significant emission is known to have occurred (identified by olfactory monitoring).

Introduction

Purpose

Holmfirth Dyers Limited (HFD) hereafter shall operate and maintain this Odour Management Plan in order to prevent, or where this is not possible, minimise the nuisance potential of odour emissions from the Dunford Road Holmfirth Site. The location of the site is such that potentially sensitive receptors lie within 1m of the site boundary.

Scope and exclusions

This document is applicable to all site activities including those carried out by employees and sub-contractors working on-site.

This odour management plan is a working document with the specific aim of ensuring that:

- Odour impact is considered as part of routine inspections.
- Odour is primarily controlled at source by good operational practices, including management control measures;
- All appropriate measures are taken to prevent or, where that is not reasonably practicable, to reduce odorous emissions to air from the factory at nearby receptors

It is not considered necessary to undertake a formal environmental impact assessment for odour as the Emissions Testing Report conducted in 2019 by Public Health England deemed odour and emissions *'highly unlikely to have contained anything which would have adversely affected the health of nearby residents'*.

Definitions

Holmfirth Dyers shall be known as **HFD** throughout the remainder of this document.

Competent person is someone who has received the necessary training or has a recognised qualification and/or skill to carry out the task correctly.

EMS refers to the site Environmental Management System.

Responsibilities

HFD Environmental Management Team

- Responsible for overall delivery of the environmental commitments of the facility whilst undertaking normal business operations and related activities
- Liaison with environmental regulators such as the EA and other regulatory bodies in the event of an emergency.
- Assess and plan measures to minimise potential odours escaping site.
- Monitors site activities and ensures control measures are in place, including odour control.

All Staff

- Responsible for ensuring that good housekeeping measures are implemented at all times.
- Report any unexpected odours on site.

Training

Relevant staff will be trained as part of the site's EMS in odour identification procedure.

All staff responsible for waste management, effluent and external activities will also be trained in odour management, how to complete olfactory monitoring and reporting odour complaints.

Odour assessment

Site location

HFD is located on Dunford Road over the River Ribble, Holmfirth, HD9 2DP – National Grid Reference SE 143080, as illustrated on the site location - Figure 1.



Figure 1 – Site location

The site covers an area spanning approximately 320 metres in length, and consists of five distinct buildings covering different activities:

- office and reception building;
- preparation and finishing facility, covering sperotto, tentering and hydro-washing;
- dyeing facility, consisting of winch dyeing and jet dyeing;
- drying facility consisting of an industrial dry-cleaning unit; and,
- boiler room.

Other activities include:

- effluent treatment plant;
- chemical storage; and
- other storage/maintenance unit.

Also refer to document 'HFD Site Layout- Sept'21'.

The site is surrounded by commercial and residential properties. The closest residential property is located about 14m Southwest of the site to the top of the valley.

The site is located within the River Ribble catchment and The River Ribble runs directly through the site as a permitted source for water abstraction.

HFD site is not located across a Nitrate Vulnerable Zone or a Groundwater Source Protection Zone.

Sensitive receptors within approximately 200m radius of the site are listed in [Table 1](#).

Sensitive receptors

Some receptors are generally more sensitive than others to odour. Domestic residences, leisure facilities, offices, schools, or hospitals can be highly sensitive to odour potential and will generally be more sensitive than industrial or commercial operations. Additionally, some individuals will be less tolerant of odours than others due to heightened sensitivity, through for example, a medical condition, or exposure experience, e.g., recognising odours or experiencing regular exposure. **To date the site has received no historic odour complaints.**

Table 1 provides a list of potential sensitive receptors near to the HFD site.

Receptor Reference	Receptor name	Potential Sensitivity	Grid Reference	Approximate Distance from Site (m)	General Direction from site
1	Simon Ashley Silver	High	SE 14357 08056	1	East
2	Phoenix	High	SE 14402 07995	1	Southeast
3	River Ribble	High	SE 14374 08002	1	On Site
4	Residential	High	SE 14311 08015	14	Southwest
5	Residential	High	SE 14399 08046	15	East
6	Bengal Spice	High	SE 14355 08085	23	Northeast
7	Da Vinci's Pizza	High	SE 14342 08097	24	Northeast
8	Residential	High	SE 14223 08052	66	West
9	Residential	High	SE 14431 08092	72	Northeast
10	Holmfirth Junior, Infant and Nursery School	Medium	SE 14289 07885	130	Southwest
11	Town Centre	Medium	SE 14198 08193	160	Northwest
12	Residential	Medium	SE 14150 08011	164	West
13	Residential	High	SE 14608 07763	200	Southwest

Table 1 – Sensitive receptors

Weather conditions

Local topography can affect the pattern of wind flow and distribution, HFD is located at the base of a steep fluvial valley along the River Ribble and as such, experience significant seasonal variation in wind speeds and patterns over the course of a year.

Although the wind speed and direction are the most significant, climatic conditions likely to affect the dispersion of odours, the effects of temperature and precipitation should also be considered. Higher ambient temperatures may increase the odour potential during the processes which use temperature. Generally, the effect of rainfall on the potential for odour emissions from the site can be positive, with the effects of wet deposition helping to reduce the distance that solid or gaseous particles can travel in the air. Natural dispersion and therefore dilution of odour in the air, reduces the impact of any odour with distance from the source.

Taking both the prevailing wind direction, [Figure 3](#) (West), and the generally localised nature of the odour into account, it is anticipated that, although any local receptor or individual could be affected by an odour release from the site operations the most likely impacted receptors would be 3, 5, 6 and 9 on [Table 1](#) as they are either very close or in the prevailing winds path to the North, East and North East of the site. Although the majority of these locations are residential the likelihood of the odour causing a nuisance is low. The effluent treatment plant, and preparation and finishing facility are the most likely sources of odours to be generated. Any odours generated from the preparation and finishing facility that are present are likely to have dispersed by the time they reach these receptors, due to the Electrostatic Precipitation Abatement System installed to the emission points.

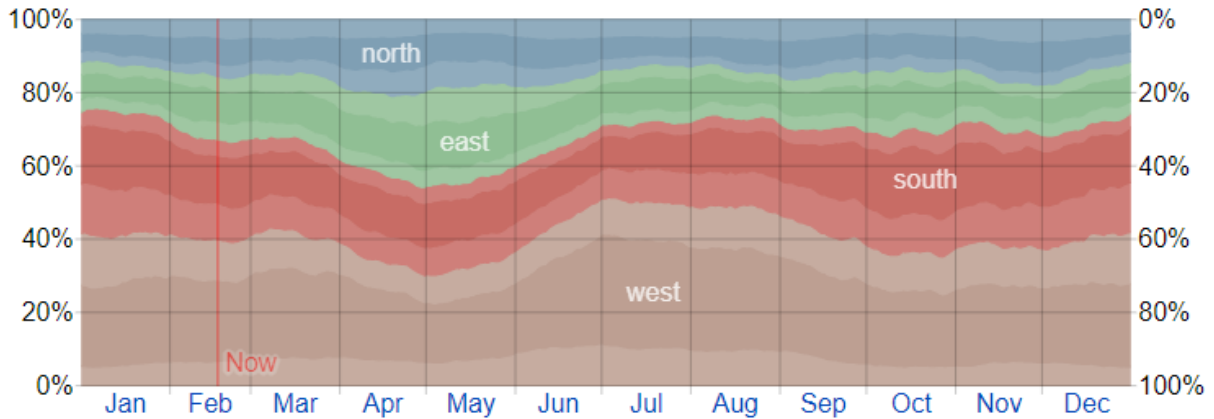


Figure 2 - Predominant average hourly wind direction – Holmfirth (Source: weatherspark.com)

Meteorological information in Figure 3 shows the windier part of the year lasts for 5.6 months, from 14th October to 2nd April, with average wind speeds of more than 19.0 kilometres per hour. The calmer time of year lasts for 6.4 months, from 2nd April to 14th October.

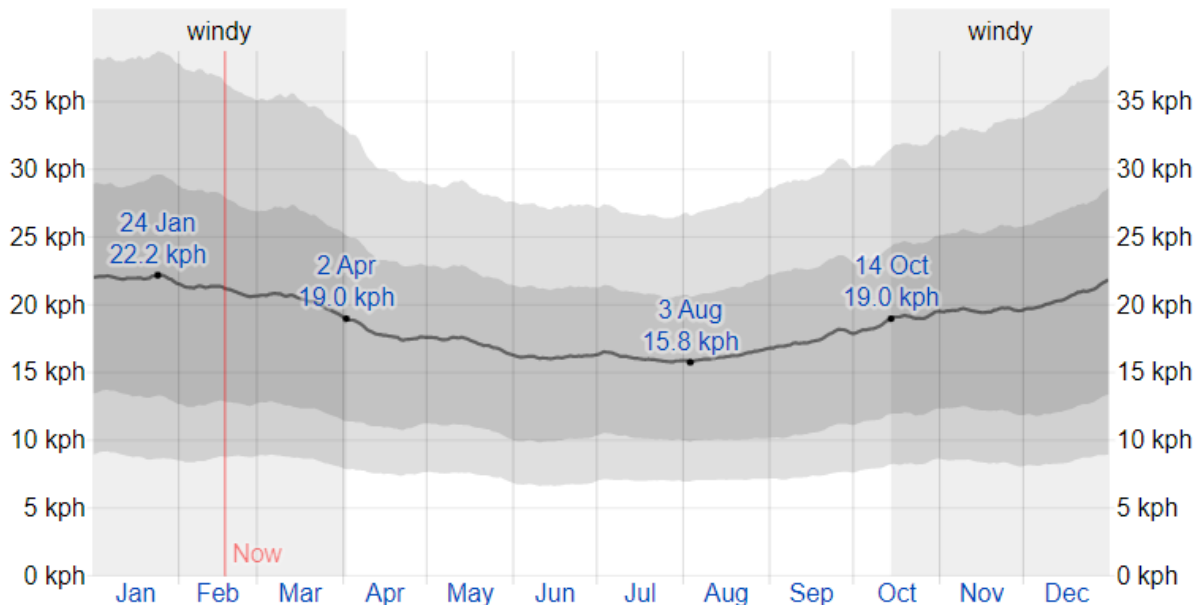


Figure 3 - Predominant average hourly wind speed – Holmfirth (Source: weatherspark.com)

This information also tells us that, more offensive odours, such as from the effluent treatment plant will be less likely to escape from site as the windier parts of the year are also the cooler months. Due to the nature of the site’s wastes and effluent, the cooler temperature will mean that the odour is less potent.

Odour source

The potential for malodours is considered to be fairly low from HFD. An investigation into the sources of potential odours from the tentering machines on site was carried out by Public Health England in 2019 and outlined in [Table 2](#).

Raw material being delivered to the site is a combination of wet and dry in nature (i.e., acids, powder dyes, etc.). The majority of the production process is carried out with wet raw materials inputted in automated preparation, dyeing and finishing processes. The production process that potentially gives rise to odours is the tentering which emits waste gases from the two stacks on site. Associated odours may arise from ancillary activities such as waste management and effluent treatment.

[Table 2](#) below highlights the potential odour emissions from tenter processes, and the quantity of odour emissions. This table lists the emissions limits set out in Process Guidance 06/08(11) and shows the levels detected for the chemicals/compounds of concern for each of the four processes. Detection levels are based on a continuous 30-minute reading as set out in PG 06/8(11).

As [Table 2](#) demonstrates, the results from emissions testing of the two stacks on site demonstrates that the quantities of measured parameters which may cause odour release and environmental impact are extremely low compared to what is deemed the 'safe-limit' by the government. This test was conducted prior to the overhaul to the abatement system outfitted to the stack on site, stack emissions from HFD are highly unlikely to have contained anything which would have adverse health effects upon sensitive receptors and nearby residents.

Odour Emission	PG 06/8(11) Limit	Pre-set polyester	Post-set FR polyester	Post-set non-FR polyester	Post-set non-FR wool
Total Particulate Matter	50	8.1	14	10	1.8
Volatile Organic Compounds	100	1.7	1.7	1.6	1.7
Carbon Monoxide	500	31	38	30	1.9
Nitrogen Oxides	500	4.2	4.5	6	0.75

Table 2 - Potential parameters/sources of odour (mg/m3)

Kirklees Council stated that, *'The readings taken for the emissions monitoring were taken in the chimney stack before they are released to atmosphere. At street level the emissions would be significantly reduced compared to the levels in the table above after dilution with the air.'*

Odour pathways

In the event of failures of odour mitigation measures on site, it is possible that odour could be transported from the source to sensitive receptors via the atmosphere. The level of dispersion is dependent on:

- atmospheric stability;
- wind speed; and
- wind direction.

The greatest frequency of events involving poor odour dispersal and odour impact thus tends to occur on cool calm days and nights when the temperature inversions block vertical dispersion. This is not to say, however, that odour impacts may not occur in other weather conditions.

Odour receptor

Malodours can have several effects on sensitive receptors, including:

- general annoyance;
- increased levels of stress;
- loss of amenity;
- loss of appetite and/or sleep;
- spoiling of social activities;
- increased awareness of perceived health effects; and
- potential for loss of value to property and assets.

Receptors in the immediate vicinity of HFD are a mixture of residential and commercial in nature as stated in clause, Sensitive receptors on page 4.

Odour impacts

Table 3 contains an assessment of the source, pathway, receptor potential of the site.

Source	Pathway	Receptor	Probability of exposure	Potential consequence of not managing odour	Overall risk
Intake and handling of raw materials	Air Transport then inhalation	Local Industry / commercial / residential	Negligible	Negative impact on business and residential activities, Spoiling of amenities	Low
Storage of raw materials	Air Transport then inhalation	Local Industry / commercial / residential	Low	Negative impact on business and residential activities, Spoiling of amenities	Low
Processing Activities (Tenter, winch-dyeing, jet-dyeing)	Air Transport then inhalation	Local Industry / commercial / residential	Medium	Negative impact on business and residential activities, Spoiling of amenities	Low
Effluent treatment	Air Transport then inhalation	Local Industry / commercial / residential	Medium	Cause annoyance, negative reputation for HFD	Low

Table 3 - Source, pathway, receptor

Complaints and monitoring

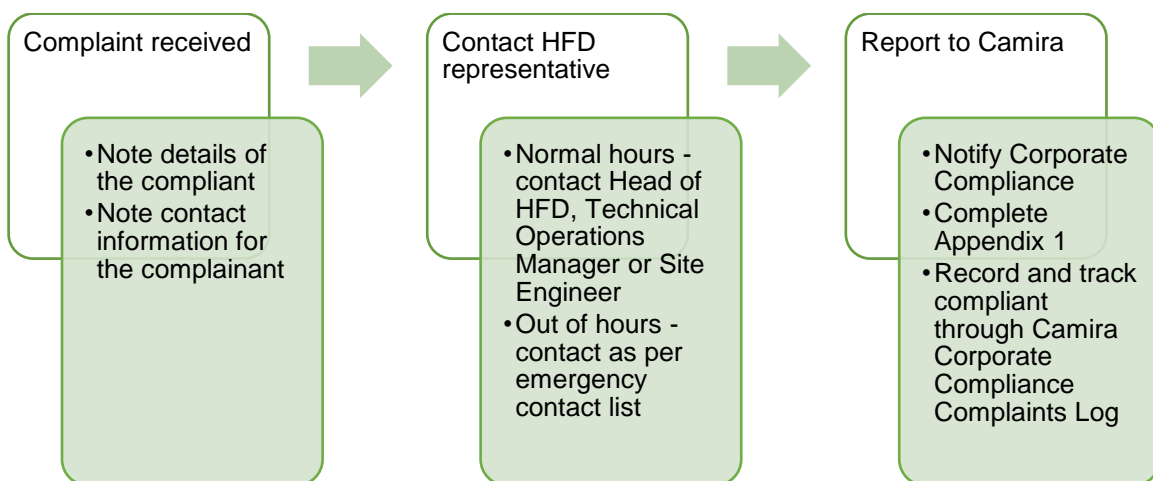
Complaints

The aim of HFD is to achieve no odorous emissions beyond the site boundary. Where this is not possible, this Odour Management Plan aims to ensure that odours escaping the site boundary are kept to a minimum and do not cause an unacceptable level of nuisance to nearby receptors.

Historically HFD **have received one formal complaint** regarding odour production from site activities, which was reported and dealt with by the Local Authority. The investigation concluded that odour produced on site falls well below the government parameters deemed to be ‘unsafe’ for human health, as described in clause, Odour source on pages 5-6. Where future complaints may arise, complainants should report directly to HFD through phone or email, as well as any communications from the Environment Agency or Local Authority, where HFD will respond directly.

Complaint procedure

The following process applies at all times for receiving and actioning complaints:



Any odour complaint, irrespective of source and any odour issue is fully investigated, using the Odour Complaints Report Form in [Appendix 1](#).

The investigation shall also include visiting the area from where the complaint came (if known) and a check on the weather conditions at the time of the complaint, generally by the use of local weather station reporting. The investigation should include checks on all process activities at the time including intake, dyeing, waste management, and effluent treatment.

Following odour complaints or issues, the level of odour monitoring should be increased, particularly in the area where the complaint originated. Investigation shall be carried out and suitable response implemented.

Monitoring

The introduction of an Environmental Management System (EMS) has resulted in improved on-site monitoring of emissions, including checks for visible signs of emissions from external emission points. The EMS is based on the principals of ISO 14001.

On-site checks

Regular inspections are carried out across the site which include environmental factors including odour and litter picking. The effluent treatment plant and waste compound are checked daily.

Any abnormal findings would be reported and investigated as a matter of priority.

Off-site checks

Investigations would be based around any complaints received using the Odour Complaint Report Form in [Appendix 1](#). In the event of any abnormal finding, the level of odour checking would be increased.

Odour assessments may also be carried out by the Environment Agency upon receipt of complaints to the local officer. Corrective Action Report (CAR) forms would be received by HFD and investigated thoroughly.

Odour control procedure

Odour emissions from the factory are categorised as “Less Offensive”. This category has been determined from H4 Odour management EA guidelines.

The risk of odour issues can be vastly reduced or eliminated due to the following control measures being in place or are adhered to:

Source	Control Measures
Intake and handling of raw materials	<ul style="list-style-type: none"> The majority of raw materials delivered to site are in bulk, and stored within appropriate containers such as IBCs, preventing odour emissions Almost all raw materials are stored within the confines of the facility. All deliveries are supervised by a competent member of HFD staff.
Storage of raw materials	<ul style="list-style-type: none"> Raw materials in batches are stored and moved inside the facility storage units.
Raw Material Processing and Site Activities	<ul style="list-style-type: none"> All production activities take place within the confines of the Facility. Abatement system is integrated to emissions from the tentering units and is subject to regular maintenance.

(tentering, hydro-washing, dyeing and dry cleaning)	
Effluent treatment	<ul style="list-style-type: none"> • The Effluent Treatment Plant undergoes regular maintenance • ETP is housed inside the effluent building • Solids are collected from effluent continuously by ETP so as to minimise the potential impact upon sewerage and reduce effluent sludge. • Leaks and spills are dealt with according to Emergency Spillage procedure. • There are emergency procedures in place should the plant fail. • The prevailing wind path is to the North, East and North East of the site and any odour would be dispersed before it reaches a sensitive receptor due to the size of the site .
Transfer of finished products	<ul style="list-style-type: none"> • Doors to buildings will be kept shut during unloading and loading operations and at all other times that access isn't required.

Table 4 - Odour Control Measures

In addition to these the following general control measures are in place on site:

- Regular visual checks are undertaken of the drainage channels and any blockages cleared as soon as is reasonably practicable;
- All complaints are taken seriously and investigated to the best of HFD ability and reported to the Environment Agency where applicable.
- A bespoke Environmental Management System is in place. The Group Risk and Compliance department shall be responsible for ensuring that odour control measures outlined are adhered to.
- Investigations are based around checklists located in [Appendix 1](#). On receipt of a complaint, the residential area shall be visited and assessed immediately, or if this was not possible then on a day with the same weather conditions and approximately same time as far as reasonably practicable.

Abnormal conditions

Abnormal situations may arise at the site during a breakdown or period of unplanned maintenance. However, the factory has a planned maintenance regime within their Environmental Management System which covers the whole plant as well as using external specialists and an onsite maintenance team. This minimises the probability of a breakdown through good management practice. Abnormal or emergency situations to be considered include:

- abnormal meteorological conditions;
- breakdown of process equipment and plant;
- staffing issues;
- power failure; and
- vandalism.

The odour control procedure outlined above is to be adhered to if an odour is released from the factory with potential to cause a nuisance to sensitive receptors. The Environment Agency should be contacted and informed.

Consideration of odour and the need to control emissions commences prior to raw materials being accepted onto site. Any new raw material is assessed, and a decision made if it could contribute or increase odour emissions.

Appendix 1

Odour Complaint Report Form		
Date: Time:	Complainant name: Complainant address:	
Complainant telephone: Complainant email address:		
Date of odour:		
Time of odour:		
Location of odour:		
Weather conditions:		
Temperature:		
Wind direction:		
Wind strength:		
Complainant description of odour: 1. What does it smell like? 2. Smell intensity (see below)? 3. Duration? 4. Frequency in this period? 5. Any other comments:		
Any similar complaints?		
Any other information?		
Complaint upheld?		
Coinciding processes?		
Coinciding operating conditions?		
Corrective actions taken:		
Completed by:	Date:	Signed:

Intensity

0	1	2	3	4	5	6
No odour	Very Faint Odour	Faint Odour	Distinct Odour	Strong Odour	Very Strong Odour	Extremely Strong Odour