Odour Assessment

Ashbourne Way, Cleckheaton

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Executive Summary

Redmore Environmental Ltd was commissioned by Newett Homes to provide an Odour Assessment in support of a residential development on land off Ashbourne Way, Cleckheaton.

The site is located within the vicinity of Lower Blacup Farm and an industrial estate. Concerns have been raised by Kirklees Council regarding the potential for odour emissions from the farm and the industrial estate to affect amenity levels at the development. A two-stage Odour Assessment was therefore undertaken to determine baseline conditions at the site and consider its suitability for the proposed end-use.

Three Field Odour Surveys were undertaken in order to assess existing odour impacts at the development. An Odour Risk Assessment was also undertaken using a standard screening methodology to consider the potential for amenity effects. The results of these two methods were combined and a number of additional factors considered to determine the overall significance of odour impact.

Based on the results of the staged assessment, overall odour effects on the site are not considered to be significant. As such, odour is not considered to represent a constraint to planning consent for the development.

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Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Newett Homes to provide an Odour Assessment in support of a planning application for a residential development on land off Ashbourne Way, Cleckheaton.

1.1.2 The site is located within the vicinity of Lower Blacup Farm and an industrial estate. These have the potential to produce odour emissions during normal operation, which may lead to reduced amenity for future residents of the development. A two-stage Odour Assessment was therefore undertaken to determine baseline conditions at the site and consider its suitability for the proposed end-use.

1.2 Site Location and Context

1.2.1 The proposed development is located on land off Ashbourne Way, Cleckheaton, at approximate National Grid Reference (NGR):418617, 424804. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise the construction of 67 residential dwellings alongside associated access, parking and infrastructure.

1.2.3 The site is located within the vicinity of Lower Blacup Farm and an industrial estate. Concerns have been raised by Kirklees Council (KC) regarding the potential for odour emissions from the farm and the industrial estate to affect amenity levels at the development. A two-stage Odour Assessment has therefore been undertaken to consider the potential for odour impacts and determine the requirement for any mitigation to control effects to an acceptable level. This included three Field Odour Surveys and a Risk Assessment. The findings are summarised in the following assessment.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance[1] defines odour as:

> "[…] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air."

2.1.2 The stated definition is considered to be relevant in the context of this assessment.

2.2 Odour Impacts

2.2.1 The magnitude of odour impact depends on a number of factors and the potential for complaints varies due to the subjective nature of odour perception. The **FIDOL** acronym (also stated as **FIDOR** in Environment Agency (EA) guidance[2]) is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM[3] as follows:

- **F**requency of detection - how often an individual is exposed to odour;
- **I**ntensity - the individual's perception of the strength of the odour;
- **D**uration - the overall duration that individuals are exposed to an odour over time;
- **O**dour unpleasantness - odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score; and,
- **L**ocation - the type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

[1] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

[2] H4: Odour Management, EA, 2011.

[3] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

2.2.2 It is important to note that even infrequent emissions may cause loss of amenity if odours are perceived to be particularly intense or offensive.

2.2.3 The **FIDOL** factors can be further considered to provide the following issues in regards to the potential for an odour emission to cause a nuisance:

- The rate of emission of the compound(s);
- The duration and frequency of emissions;
- The time of the day that this emission occurs;
- The prevailing meteorology;
- The sensitivity of receptors to the emission i.e. whether the odorous compound is more likely to cause nuisance, such as the sick or elderly, who may be more sensitive;
- The odour detection capacity of individuals to the various compound(s); and,
- The individual perception of the odour (i.e. whether the odour is regarded as unpleasant). This is greatly subjective and may vary significantly from individual to individual. For example, some individuals may consider some odours as pleasant, such as petrol, paint and creosote.

2.3 Odour Legislative Control

2.3.1 The main requirement with respect to odour control from industrial activities is the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments. If a process is deemed potentially odorous then the relevant regulator will usually include an appropriate condition in the site's Environmental Permit to restrict impacts beyond the facility boundary.

2.3.2 Enforcement of the condition is by the relevant regulator, either the EA for Part A(1) and waste processes, or the Local Authority for Part A(2) and B processes. If the regulator is satisfied that odour from a facility is causing pollution beyond the site boundary, then they can serve an improvement notice that requires remedial works to be undertaken to reduce impacts to an acceptable level. The measures that are deemed appropriate will depend on the industry sector and site-specific circumstances and will take costs and benefits into account. Should appropriate actions not be taken by the operator then the regulator has a number of available options, cumulating in the revocation of the Environmental Permit and cessation of all activities on site.

2.3.3 The main requirement with respect to odour control facilities not controlled under the Environmental Permitting (Engladn and Wales) Regulations (2016) and subsequent amendments, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

> "Any dust, steam, odour or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

2.3.4 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the Local Authority is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

2.3.5 The legislative controls described above were considered as necessary throughout the undertaking of this assessment.

2.4 National Planning Policy

2.4.1 The revised National Planning Policy Framework[4] (NPPF) was published in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.

2.4.1 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to odour:

> "c) an environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

[4] NPPF, Ministry of Housing, Communities and Local Government, 2023.

2.4.2 Chapter 12 of the NPPF details objectives in relation to achieving well-designed place. It states that:

> "Planning policies and decisions should ensure that developments:
>
> […]
>
> f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesions and resilience."

2.4.3 The implications of the NPPF have been considered throughout this assessment.

2.5 Local Planning Policy

2.5.1 The Kirklees Local Plan[5] was adopted by KC in February 2019. A review of the document was undertaken in order to identify any planning policies relevant to the assessment. This indicated the following:

> "Policy LP52
>
> Protection and improvement of environmental quality
>
> Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment. Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution

5 Hambleton Local Plan, HDC, 2022.

levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted. Where possible, all new development should improve the existing environment."

"Policy LP24

Design

[…]

Proposals should promote good design by ensuring:

[…]

b. They provide a high standard of amenity for future and neighbouring occupiers; including maintaining appropriate distances between buildings and the creation of development-free buffer zones between housing and employment uses incorporating means of screening where necessary; […]"

2.5.2 The above policies were taken into consideration throughout the undertaking of the assessment.

2.6 Institute of Air Quality Management Guidance

2.6.1 The IAQM published the 'Guidance on the Assessment of Odour for Planning'[6] document on 20th May 2014. This was updated in 2018[7] and specifically deals with assessing odour impacts for planning purposes, namely potential effects on amenity. The assessment methodology outlined in the guidance has been utilised in throughout this report where relevant.

6 Guidance on the Assessment of Odour for Planning, IAQM, 2014.

7 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

3.0 BASELINE

3.1 Introduction

3.1.1 Existing conditions in the vicinity of the site were identified in order to provide a baseline for the assessment. These are detailed in the following Sections.

3.2 Site Description

3.2.1 The proposed development is located within the town of Cleckheaton, West Yorkshire. The site is bordered to the west by agricultural land which is grazed by a small number of show cows and horses, to the east and south by existing residential properties and to the north by a small industrial estate. Lower Blacup Farm is located adjacent to the site boundary to the west. The industrial estate which includes a number of workshops extends north-west of the site boundary.

3.3 Potential Odour Sources

Desk Top Study

3.3.1 A desk-top study was undertaken in order to identify any potential odour sources in the vicinity of the development that required specific consideration during the assessment. The findings are summarised in Table 1.

Table 1 Potential Odour Sources

Source		Distance from Site (m)	Direction from Site	Description of Activities	Potential Odours
1	Lower Blacup Farm	Adjacent	West	Livestock rearing and grazing	Fugitive odour emissions associated with livestock rearing and grazing
2	Industrial Estate	25 - 550	North-West	Premises include a number of workshop facilities and Stables Garage which includes a spray booth with an external extract and is regulated under a Part B Environmental	Fugitive odour emissions associated with the commercial premises Paint type odours associated with the vehicle repair shop paint spray booth extract

Source		Distance from Site (m)	Direction from Site	Description of Activities	Potential Odours
				Permit (reference: PPC E87).	

3.3.2 As shown in Table 1, there are two potential odour sources within the vicinity of the site. Reference should be made to Figure 2 for a map showing the source locations. It should be noted that a number of units within the industrial estate have been demolished prior to completion of the assessment. In addition, planning consent has been granted for a residential development within part of the industrial area (KC reference: 2021/62/93657/E), as shown in Figure 2. As such, industrial facilities within this area have not been considered further as part of this assessment.

Site Visit

3.3.3 A site visit was undertaken on 19th March 2024 to visually assess and further investigate the potential odour sources identified in Table 1. A summary of the findings is provided in Table 2.

Table 2 Location of Potential Odour Sources

Location		Potential Odour Sources
1	Lower Blacup Farm	• There are a number of buildings on site. These are used for the storage of agricultural equipment and the rearing of livestock. There may be the potential for fugitive odour emissions from openings on the structures. It should be noted that the building closest to the site boundary houses a wedding car business. As such, it is considered that there is limited potential for odour emissions from this area of the farm • A small number of Guernsey show cows graze in fields south of the farm, to the west of the development. These and associated manure within the fields may represent a source of odour emissions • In a field north of the farm, to the west of the site, land is leased to a neighbouring property to graze a small number of horses, with a stable present. These and associated manure may represent a source of odour emissions
2	Industrial Estate	• Stables Garage is approximately 100m west of the northern site boundary. This includes a spray booth with external extract. As such, the premises operates in accordance with a Part B Environmental Permit (reference: PPC E87) issued by KC. There is potential for paint type odour emissions from the spray booth extract

Location		Potential Odour Sources
		• There are a number of other non-permitted workshop facilities on the industrial estate. There may be the potential for fugitive odour emissions from openings such as roller shutter doors on the buildings

3.4 Meteorological Conditions

3.4.1 The potential for atmospheric emissions to impact at sensitive locations depends significantly on the meteorology, particularly wind direction, during release. In order to consider prevailing conditions at the site, review of historical weather data was undertaken. Meteorological data used in the assessment was taken from Leeds Bradford Airport meteorological station at NGR: 422676, 441150, which is approximately 16.7km north-east of the site. It is considered that conditions are likely to be reasonably similar over a distance of this magnitude and the information is a suitable source of data for an assessment of this nature.

3.4.2 Meteorological data was obtained from Leeds Bradford Airport meteorological station over the period 1st January 2019 to 31st December 2023 (inclusive). This is summarised in Table 3. Reference should be made to Figure 3 for a wind rose of the meteorological data.

Table 3 Wind Frequency Data

Wind Direction (°)	Frequency of Wind (%)
345 - 15	4.45
15 - 45	5.72
45 - 75	6.44
75 - 105	4.48
105 - 135	5.59
135 - 165	7.14
165 - 195	5.85
195 - 225	11.32
225 - 255	16.55
255 - 285	20.53

Wind Direction (°)	Frequency of Wind (%)
285 - 315	7.37
315 - 345	2.64
Sub-Total	98.07
Calms	0.60
Missing/Incomplete	1.32

3.4.3 All meteorological data used in the assessment was provided by Atmospheric Dispersion Modelling Ltd, which is an established distributor of meteorological data within the UK.

3.4.4 As shown in Table 3, the prevailing wind direction at the site is from the west. Winds from the north and east are relatively infrequent, which is indicative of conditions throughout the majority of the UK.

4.0 METHODOLOGY

4.1 Introduction

4.1.1 The development has the potential to expose future residents to any existing odour issues at the site. An Odour Assessment has therefore been undertaken in accordance with the IAQM 'Guidance on the Assessment of Odour for Planning'[8] document, as summarised in the following Sections. This methodology was agreed with Shirley Reynolds, Environmental Health Officer at KC, on 2nd August 2024.

4.2 Field Odour Surveys

Background

4.2.1 An adverse effect of odour exposure, such as annoyance or loss of amenity, is subjective and is not something that can be wholly defined or assessed by scientific methods alone. An assessment can therefore be strengthened by including a subjective assessment of prevailing odour conditions by those directly affected or by experienced, trained, observers.

4.2.2 Sensory testing techniques use the human nose as the analytical sensor to enable the odour magnitude (as either intensity or concentration), frequency, duration and offensiveness of the odour to be recorded at a particular location at a specific time. This is a sound approach considering that no analytical instrument can currently give a unified measure of a complex mixture of compounds that quantifies it as a whole in the same way that a human experiences odour. Sensory testing also allows the character of the odour to be assessed, which is a great benefit when there are a number of different odour sources.

4.2.3 Subjective sensory tests, such as the Field Odour Survey, should not automatically be considered inferior to quantitative ambient monitoring. When carried out to a rigorous, well-designed methodology, the results of such sensory surveys can be expected to be robust and reproducible.

8 Guidance on the Assessment of Odour for Planning, IAQM, 2018.

Field Odour Survey Procedure

4.2.4 Sensory tests were carried out at a number of survey locations on 26th July 2024, 30th July 2024 and 9th August 2024. The survey positions for each site visit were chosen to provide an indication of conditions throughout the development site and downwind of the closest identified sources.

4.2.5 The survey locations are summarised in Table 4 and shown visually in Figure 4.

Table 4 Survey Locations

Position	Location Description
1	Proposed Development - South-eastern boundary
2	Proposed Development - South side of development site
3	Proposed Development - East boundary
4	Proposed Development - West side of development site
5	Proposed Development - East boundary
6	Proposed Development - West boundary
7	Proposed Development - North-western boundary
8	Proposed Development - North-western area of development site
9	Proposed Development - North-eastern boundary
10	Clare Road - Southern end
11	Clare Road - Northern end
12	Robert's Street
13	Iron Street
14	Brick Street

4.2.6 Monitoring was undertaken over a 5-minute period at each position. For each test location, the start time of the observation period, meteorological conditions and the attributes of the odour were recorded as follows:

- The assessor breathed normally, inhaling ambient air samples through the nose every 10-seconds, to give 30 samples over the 5-minute observation period;
- For each sample, the odour intensity was recorded using the scale outlined in Table 5.

Table 5 Odour Intensity Scale

Odour Strength	Intensity Level	Comments
No odour/not perceptible	0	No odour when compared to the clean site
Slight/very weak	1	There is probably some doubt as to whether the odour is actually present
Slight/weak	2	The odour is present but cannot be described using precise words or terms
Distinct	3	The odour character is barely recognisable
Strong	4	The odour character is easily recognisable
Very strong	5	The odour is offensive. Exposure to this level would be considered undesirable
Extremely strong	6	The odour is offensive. An instinctive reaction would be to mitigate against further exposure

- At the end of the observation period at the test location, the odour unpleasantness was noted by classifying it as unpleasant, neutral (neither pleasant nor unpleasant) or pleasant. This assumed that at least some of the 30 samples were of intensity 3 or more (i.e. the odour is at least 'barely recognisable');
- The odour descriptor and meteorological conditions were also noted;
- The pervasiveness/extent of the odour at the test location was assessed by calculating the percentage odour time, $t_{I\geq4}$, which is the number of samples where odour was recognisable divided by the total number of samples (i.e. 30). Note that 'recognisable odour' is where the odour strength exceeds the recognition threshold and is definitely recognisable by the assessor i.e. the assessor is capable of definitely identifying its quality/character, which corresponds to an intensity of 4 or more; and,
- The average odour intensity (I_{mean}) over the test period was calculated and the maximum intensity (I_{max}) noted.

4.2.7 The following additional factors were also adopted to safeguard the quality of the sensory assessments:

- The odour assessor would not have undertaken the assessment if they had a cold, sore throat, sinus trouble, etc;
- The odour assessor was not hungry or thirsty;
- The odour assessor did not work within half an hour of the end of their last meal;
- The odour assessor did not smoke or consume strongly flavoured food or drink, including coffee, for at least half an hour before the field odour survey was carried out, or during the survey;
- The odour assessor did not consume confectionery or soft drinks for at least half an hour before the field odour survey was carried out, or during the survey;
- Scented toiletries, such as perfume/aftershave were not used on the day of the field odour survey; and,
- The vehicle used during the field odour survey did not contain any deodorisers.

Odour Exposure

4.2.8 Following completion of the Field Odour Surveys, the matrix outlined in Table 6 was utilised to determine the level of odour exposure at each monitoring location.

Table 6 Odour Exposure

Average Intensity (I_{mean})	Percentage Odour Time ($t_{i\geq4}$)				
	≤10%	11% to 20%	21% to 30%	31% to 40%	≥41%
6	Large	Very Large	Very Large	Very Large	Very Large
5	Medium	Large	Large	Very Large	Very Large
4	Small	Medium	Medium	Large	Large
3	Small	Medium	Medium	Medium	Medium
2	Small	Small	Medium	Medium	Medium
1	Small	Small	Small	N/A	N/A

4.2.9 It should be noted that I_{mean} was rounded to the nearest whole number.

4.2.10 The following overriding considerations also affect the scoring of the odour annoyance impact:

- If I_{mean} = 0, then the odour effect can for practical purposes be considered **negligible**; and,
- If I_{mean} = 1 but $t_{I\geq4}$ = 0%, then the odour effect can for practical purposes be considered **negligible**.

Significance of Odour Effect

4.2.11 Following the determination of the odour exposure level, the significance of effect was determined through the interaction with receptor sensitivity, as outlined in Table 7.

Table 7 Odour Receptor Sensitivity

Sensitivity	Description
High	Surrounding land where: • Users can reasonably expect enjoyment of a high level of amenity; and, • People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land Examples may include residential dwellings, hospitals, schools/education and tourist/cultural
Medium	Surrounding land where: • Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or, • People would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land Examples may include places of work, commercial/retail premises and playing/recreation fields
Low	Surrounding land where: • The enjoyment of amenity would not reasonably be expected; or, • There is transient exposure, where the people would reasonably be expected to present only for limited periods of time as part of the normal pattern of use of the land Examples may include industrial use, farms, footpaths and roads

4.2.12 The assessment matrix is provided in Table 8.

Table 8 Odour Effect Significance

Overall Odour Exposure	Receptor Sensitivity		
	Low	Medium	High
Very Large	Substantial	Substantial	Substantial
Large	Moderate	Moderate	Substantial
Medium	Slight	Slight	Moderate
Small	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

4.3 Risk Assessment

Background

4.3.1 The basic concept of risk assessment is that the overall risk depends on the probability of an event occurring together with the likely consequences if it was to occur. For odour assessments the probability can be considered as the likelihood of exposure (impact), and the consequence can be considered to be the effect on the receptor if that exposure (impact) took place. These two facets can be summarised by the source-pathway-receptor concept.

4.3.2 Behind the source-pathway-receptor concept, is the fundamental relationship:

Effect ≈ Dose x Response

4.3.3 In the specific case of odour assessments, the dose can be considered equivalent to the odour exposure, or impact. This will be determined by FIDO of the FIDOL factors. The effect is the result of the changes on specific receptors (people in the case of odour) taking into account their sensitivities (i.e. responsiveness to odour), the L (location) in FIDOL is to categorise the sensitivity.

4.3.4 The IAQM guidance states that a qualitative risk-based approach is appropriate for:

- Screening of odour impacts;
- Development proposals likely to have a low risk of adverse effects;

- Situations where there is insufficient information to carry out detailed predictive dispersion modelling;
- Situations where the information has wide uncertainties and its use as input to a detailed predictive dispersion model would be at best a waste of time, money and effort or, worse, would lead to an illusory and false impression of accuracy and precision in the numbers generated; and,
- When the model is not able to properly represent the reality of the situation being assessed, e.g. if the odour effects are likely to be significantly influenced by accidental, unexpected, or unknown releases. In such instances a qualitative estimate may be more appropriate, on the basis that it is better to be broadly correct than precisely wrong.

4.3.5 It is considered that the third, fourth and fifth criteria are met for this project. As such, a qualitative assessment methodology was deemed appropriate.

Risk Assessment Procedure

4.3.6 The first step in the assessment is to estimate the odour generating potential of the site activities. This is termed the Source Odour Potential, which takes into account three factors:

- The scale (magnitude) of the release from the odour source, taking into account the effectiveness of any odour control or mitigation measures that are already in place. This involves judging the relative size of the release rate after mitigation and taking account of any pattern of release (e.g. intermittency);
- How inherently odorous the emission is. In some cases it may be known whether the release has a low, medium or high Odour Detection Threshold (ODT). This is the concentration at which an odour becomes detectable to the human nose. In most instances the odours released by a source will be a complex mixture of compounds and the detectability will not be known. However, for some industrial processes the odour will be due to one or a small number of known compounds and the detection thresholds will be a good indication of whether the release is highly odorous or mildly odorous; and,
- The relative pleasantness/unpleasantness of the odour.

4.3.7 Using the example risk ranking in Table 9, the Source Odour Potential can be categorised as **small**, **medium** or **large**.

Table 9 Source Odour Potential

Source Odour Potential	Comments
Large	**Magnitude** - Larger Environmentally Permitted processes of odorous nature or large Sewage Treatment Works (STWs); materials usage hundreds of thousands of tonnes/m^3 per year; area sources of thousands of m^2. The compounds involved are very odorous (e.g. mercaptans), having very low ODTs where known **Unpleasantness** - processes classed as "Most offensive" in EA Guidance H4[9]; or (where known) compounds/odours having unpleasant (-2) to very unpleasant (-4) hedonic score **Mitigation/control** - open air operation with no containment, reliance solely on good management techniques and best practice
Medium	**Magnitude** - smaller Environmentally Permitted processes or small STWs; materials usage thousands of tonnes/m^3 per year; area sources of hundreds of m^2. The compounds involved are moderately odorous **Unpleasantness** - processes classed in EA Guidance H4[10] as "Moderately offensive"; or (where known) odours having neutral (0) to unpleasant (-2) hedonic score **Mitigation/control** - some mitigation measures in place, but significant residual odour remains
Small	**Magnitude** - falls below Environmental Permit Part B threshold; materials usage hundreds of tonnes/m^3 per year; area sources of tens m^2. The compounds involved are only mildly odorous, having relatively high ODTs where known **Unpleasantness** - processes classed as "Less offensive" in EA Guidance H4[11]; or (where known) compounds/odours having neutral (0) to very pleasant (+4) hedonic score **Mitigation/control** - effective, tangible mitigation measures in place leading to little or no residual odour

4.3.8 The next step is to estimate the effectiveness of the pollutant pathway as the transport mechanism for odour through the air to the receptor, versus the dilution/dispersion in the atmosphere. Any factor that increases dilution and dispersion of the plume as it travels from source to receptor will reduce the concentration at the end point, and hence reduce exposure. Important factors for consideration are:

9 H4: Odour Management, EA, 2011.

10 H4: Odour Management, EA, 2011.

11 H4: Odour Management, EA, 2011.

- The distance between sensitive receptors and the odour source;
- Whether receptors are downwind with respect to the prevailing wind direction. Odour episodes often tend to occur during stable atmospheric conditions with low wind speed, which gives poor dispersion and dilution. Receptors close to the source in all directions can be affected under these conditions. When circumstances are not calm, it will be the downwind receptors that are affected. As such, receptors that are downwind with respect to the prevailing wind direction tend to be at higher risk of odour impact;
- The effectiveness of the point of release in promoting good dispersion e.g. releasing emissions from a high stack will increase the pathway, dilution and dispersion; and,
- The topography and terrain between the source and receptor. The presence of topographical features such as hills and valleys, or urban terrain features such as buildings, can affect air flow and therefore increase, or inhibit, dispersion and dilution.

4.3.9 Using the example risk ranking in Table 10, the pollutant pathway from source to receptor can be categorised as **ineffective**, **moderately effective**, or **highly effective**.

Table 10 Pathway Effectiveness

Pathway Effectiveness	Comments
Highly effective	**Distance** - receptor is adjacent to the source/site; distance well below any official set-back distances **Direction** - high frequency of winds from source to receptor, or, qualitatively, receptors downwind of source with respect to prevailing wind **Effectiveness of dispersion/dilution** - open processes with low-level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes
Moderately effective	**Distance** - receptor is local to the source **Where mitigation relies on dispersion/dilution** - releases are elevated, but compromised by building effects
Ineffective	**Distance** - receptor is remote from the source; distance exceeds any official set-back distances **Direction** - low frequency of winds from source to receptor, or, qualitatively, receptors upwind of source with respect to prevailing wind **Where mitigation relies on dispersion/dilution** - releases are from high level (e.g. stacks, or roof vents greater than 3m above ridge height) and are not compromised by surrounding buildings

4.3.10 The sensitivity of the receiving receptor is defined based on the criteria shown in Table 7.

4.3.11 The estimates of Source Odour Potential and Pathway Effectiveness are considered together to predict the risk of odour exposure (impact) at the receptor location, as shown by the matrix in Table 11.

Table 11 Risk of Odour Exposure

Pathway Effectiveness	Source Odour Potential		
	Small	Medium	Large
Highly effective	Low	Medium	High
Moderately effective	Negligible	Low	Medium
Ineffective	Negligible	Negligible	Low

4.3.12 The final step is to determine the significance of odour effect at the specified receptor location through the interaction between sensitivity and risk, as outlined in Table 12.

Table 12 Significance of Odour Effect

Risk of Odour Exposure	Receptor Sensitivity		
	Low	Medium	High
High	Slight	Moderate	Substantial
Medium	Negligible	Slight	Moderate
Low	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

4.4 Overall Odour Significance

4.4.1 Following completion of the Field Odour Surveys and Risk Assessment, the IAQM guidance[12] states that a conclusion on the likely significance of the predicted impact should be reached. Where the overall effect is **moderate** or **substantial**, the effect is likely to be considered **significant**, whilst if the effect is **slight** or **negligible**, the impact is likely to be considered **not significant**. It should be noted that this is a binary judgement of either it

[12] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

is **significant** or it is **not significant**. This has been considered to determine the overall significance of potential odour effects at the development site.

4.4.2 The IAQM guidance recognises that assessment of odour requires some degree of professional judgement[13]. Qualitative methodologies such as those utilised within this report provide guidance for assessing potential impacts. However, professional judgement should be exercised in order to take account of the specific details which are unique to each development. This has been considered as necessary throughout the assessment. The IAQM also suggest that the assessor's qualifications and experience are detailed within an Odour Assessment. These are provided in Appendix 1.

[13] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

5.0 RESULTS

5.1 Field Odour Surveys

Field Odour Survey 1

5.1.1 Field Odour Survey 1 was undertaken between 10:15 and 12:22 on 26th August 2024. The results are summarised in Table 13.

Table 13 Field Odour Survey 1 - Results

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
1	0	1	2	N/A	Vegetation	-
2	0	2	3	Neutral	Vegetation, cows/manure	Five cows in field. Area of manure at survey location
3	0	1	2	N/A	Vegetation, flowers	-
4	0	1	3	Pleasant	Vegetation, cows/manure	Five cows in field
5	0	1	2	N/A	Vegetation	Four horses in field to west of survey location
6	0	2	2	N/A	Vegetation	-
7	0	1	3	Neutral	Horse	Horses approached survey location
8	0	2	3	Neutral	Horse	-
9	0	1	2	N/A	Vegetation	-
10	0	1	1	N/A	-	-
11	0	1	1	N/A	-	-
12	0	1	2	N/A	Vegetation	-
13	0	1	2	N/A	Sweet scent, savoury food	-

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
14	10	2	4	Neutral	Chemical, industrial, vehicles, hot tarmac	-

5.1.2 The meteorological conditions during the monitoring were dry and clear with temperatures of approximately 17°C. The wind direction was from the west throughout the survey. The wind speed was rated between 1 and 4 on the Beaufort scale.

Field Odour Survey 2

5.1.3 Field Odour Survey 2 was undertaken between 13:00 and 14:57 on 30th July 2024. The results are summarised in Table 14.

Table 14 Field Odour Survey 2 - Results

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
1	0	1	2	N/A	Vegetation	-
2	0	1	2	N/A	Agricultural	Five cows in field
3	0	1	2	N/A	Vegetation	-
4	0	1	2	N/A	Agricultural, vegetation	-
5	0	1	2	N/A	Agricultural, vegetation	Four horses in field to west of survey location
6	0	1	2	N/A	Vegetation, road/tarmac	-
7	0	1	2	N/A	Agricultural, vegetation	-
8	0	1	2	N/A	Agricultural, vegetation	-
9	0	1	2	N/A	Agricultural/horse, vegetation	-
10	0	1	1	N/A	N/A	-
11	0	1	2	N/A	Hot road, vegetation	-

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
12	0	1	2	N/A	Sweet scent	-
13	0	1	2	N/A	Vegetation, fried food	Steam exhaust from building north of Westgate Road
14	0	2	2	N/A	Hot tarmac, food/cooking	Machinery active at site east of survey location

5.1.4 The meteorological conditions during the monitoring were dry and clear with temperatures of approximately 24°C. The wind direction was from the north-west at all positions. The wind speed was rated between 1 and 3 on the Beaufort scale.

Field Odour Survey 3

5.1.5 Field Odour Survey 3 was undertaken between 10:17 and 12:11 on 9th August 2024. The results are summarised in Table 15.

Table 15 Field Odour Survey 3 - Results

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
1	0	1	2	N/A	Cow manure	-
2	0	1	1	N/A	N/A	Five cows in field
3	0	1	2	N/A	Cow manure	-
4	0	1	1	N/A	N/A	-
5	0	1	1	N/A	N/A	Four horses in field to west of survey location
6	0	1	1	N/A	N/A	-
7	0	1	2	N/A	Malt, Horse	-
8	0	1	2	N/A	Malt	-
9	0	1	2	N/A	Vegetation	-
10	0	0	1	N/A	N/A	-
11	0	1	2	N/A	Exhaust Fumes	-

Position	$t_{I\geq4}$ (%)	I_{mean}	I_{max}	Unpleasantness	Odour Description	Notes
12	0	0	1	N/A	N/A	-
13	0	1	2	N/A	Exhaust Fumes	-
14	0	1	2	N/A	Exhaust Fumes	-

5.1.6 The meteorological conditions during the monitoring were dry and clear with temperature of approximately 17°C. The wind direction was from the west throughout the survey. The wind speed was rated between 2 and 5 on the Beaufort scale.

Odour Exposure and Significance

5.1.7 Following completion of the three Field Odour Surveys, odour exposure at each of the monitoring locations was determined. This is summarised in Table 16. Any exposure risk greater than **negligible** is shown in **bold**.

Table 16 Field Odour Surveys - Odour Exposure Risk

Position	Odour Exposure		
	Field Odour Survey 1	Field Odour Survey 2	Field Odour Survey 3
1	Negligible	Negligible	Negligible
2	Negligible	Negligible	Negligible
3	Negligible	Negligible	Negligible
4	Negligible	Negligible	Negligible
5	Negligible	Negligible	Negligible
6	Negligible	Negligible	Negligible
7	Negligible	Negligible	Negligible
8	Negligible	Negligible	Negligible
9	Negligible	Negligible	Negligible
10	Negligible	Negligible	Negligible
11	Negligible	Negligible	Negligible
12	Negligible	Negligible	Negligible

Position	Odour Exposure		
	Field Odour Survey 1	Field Odour Survey 2	Field Odour Survey 3
13	Negligible	Negligible	Negligible
14	**Small**	Negligible	Negligible

5.1.8 As shown in Table 16, odour exposure was **negligible** at all positions during all surveys with the exception of location 14 during Survey 1 where odours detected resulted in an exposure of **small**. It should be noted that impacts relate to all odours detected, as well as those thought to be associated with the identified sources.

5.1.9 The significance of the odour impact at each location was determined in accordance with the criteria outlined in Table 8. The proposed development includes residential units and is therefore considered to be of **high** sensitivity.

5.1.10 The significance of the odour exposure results for the Field Odour Surveys is summarised in Table 17. Any significance greater than **negligible** is shown in **bold**.

Table 17 Odour Significance

Position	Odour Exposure		
	Field Odour Survey 1	Field Odour Survey 2	Field Odour Survey 3
1	Negligible	Negligible	Negligible
2	Negligible	Negligible	Negligible
3	Negligible	Negligible	Negligible
4	Negligible	Negligible	Negligible
5	Negligible	Negligible	Negligible
6	Negligible	Negligible	Negligible
7	Negligible	Negligible	Negligible
8	Negligible	Negligible	Negligible
9	Negligible	Negligible	Negligible
10	Negligible	Negligible	Negligible
11	Negligible	Negligible	Negligible

Position	Odour Exposure		
	Field Odour Survey 1	Field Odour Survey 2	Field Odour Survey 3
12	Negligible	Negligible	Negligible
13	Negligible	Negligible	Negligible
14	**Slight**	Negligible	Negligible

5.1.11 As shown in Table 15, impacts were **negligible** at all positions during all surveys, with the exception of location 14 during Survey 1 where impacts were **slight**.

5.1.12 Reference should be made to Figure 5 for a graphical representation of the findings.

5.2 Risk Assessment

5.2.1 The odour risk at the development location was assessed in accordance with the IAQM methodology. The first step was to classify the Source Odour Potential of the sources identified in Table 1. This is summarised in Table 18.

Table 18 Source Odour Potential

Source		Source Odour Potential	Justification
1	Lower Blacup Farm	Small	Activities at the premises are not controlled under the Environmental Permitting (England and Wales) Regulations (2016) Odours associated with agricultural operations would be classified as 'moderately offensive' in accordance with EA Guidance H4[14] The site is a non-intensive farm, with only a small number of Guernsey show cows reared. Land is also leased to a neighbouring property to graze a small number of horses. The buildings used to house livestock are located on the western section of the farm, approximately 60m from the site boundary. The closest building to the development is used by a wedding car business and considered unlikely to result in odour emissions

[14] H4: Odour Management, EA, 2011.

Source		Source Odour Potential	Justification
2	Industrial Estate	Medium	The majority of premises at the industrial estate fall below the threshold for control under the Environmental Permitting (England and Wales) Regulations (2016) Activities at premises on the industrial estate are undertaken within buildings. The structures of the buildings are likely to contribute to containment of any associated odour emissions Stables Garage includes a spray booth with an external extract and is regulated under a Part B Environmental Permit (reference: PPC E87) issued by KC. In accordance with the Environmental Permitting (England and Wales) Regulations (2016), the Permit should include appropriate conditions to restrict odour impacts as a result of any atmospheric emissions beyond the boundary of the site On balance, it is considered that the overall source odour potential associated with the industrial estate is **small**. However, as Stables Garage is regulated under Part B Environmental Permit and any associated paint type odours could potentially be classified as 'moderately offensive' in accordance with EA Guidance H4[15], a source odour potential of **medium** has been applied in order to ensure a worst-case assessment

5.2.2 The pathway effectiveness was subsequently defined between the sources and the development based on the distances between the locations and the prevailing meteorological conditions. This is summarised in Table 19.

Table 19 Odour Pathway Effectiveness

Source		Pathway Effectiveness	Justification
1	Lower Blacup Farm	Highly effective	The farm is adjacent to the proposed development The development is predominantly downwind of the source with respect to the prevailing meteorological conditions The agricultural buildings are likely to provide partial containment of any emissions associated with internal activities. However, there may be the potential for fugitive odour releases from openings on the structures
2	Industrial Estate	Moderately effective	The industrial site is local to the proposed development The development is not situated downwind of the source with respect to prevailing meteorological conditions. However, there are moderate frequencies

15 H4: Odour Management, EA, 2011.

Source		Pathway Effectiveness	Justification
			of winds from sectors which may be conductive to odour transfer to the site Activities at premises on the industrial estate are undertaken within buildings. The structures of the buildings are likely to contribute to containment of any associated odour emissions. However, there may be the potential for fugitive odour releases from openings on the structures Trees to the south of the industrial estate are likely to contribute to screening of any fugitive emissions from the premises. They are also likely to contribute to turbulent flow locally and help to improve the dilution and dispersion of any associated emissions

5.2.3 The above information has been used to assess odour risk from the sources. This is summarised in Table 20.

Table 20 Odour Risk Assessment

Source		Source Odour Potential	Pathway Effectiveness	Exposure Risk	Sensitivity of Receptor	Effect Significance
1	Lower Blacup Farm	Small	Highly effective	Low	High	Slight
2	Industrial Estate	Medium	Moderately effective	Low	High	Slight

5.2.4 As shown in Table 20, the predicted odour effect significance was **slight** as a result of emissions from Lower Blacup Farm and the industrial estate.

6.0 DISCUSSION

6.1 Field Odour Surveys

6.1.1 As shown in Table 13 to Table 15, a range of odours were detected during the three Field Odour Surveys. These are discussed further in the following Section.

6.1.2 Odours associated with agriculture including manure and general livestock-type odours were detected during all three Field Odour Surveys. These resulted in **negligible** impacts at all locations during all monitoring periods.

6.1.3 Odours associated with premises on the industrial estate including chemicals, machinery and vehicle exhaust fume type odours were detected during all three Field Odour Surveys at position 11 and position 14. The odours resulted in a **slight** impact at position 14 during Survey 1 and **negligible** impacts at all other locations during the monitoring periods.

6.1.4 As shown in Section 5.1, low to moderate wind speeds were experienced during all three Surveys. These can contribute to poor dispersion and dilution of emissions. In addition, positions 1 to 9 were downwind of Lower Blacup Farm during Survey 1 and Survey 3. Positions 1 to 14 were downwind of the industrial estate during Survey 2. Consequently, the results can be considered a robust representation of odour conditions at the development site during worst-case conditions.

6.2 Risk Assessment

6.2.1 The Odour Risk Assessment indicated that the predicted odour effect significance was **slight** as a result of emissions from the farm and the industrial estate. This is due to the distance between the sources and the proposed development, the emission source characteristics and the prevailing meteorological conditions at the site.

6.3 Summary

6.3.1 Three Field Odour Surveys were undertaken across the site in accordance with the IAQM methodology. The results indicated odour impacts ranging between **negligible** and **small**. This is predicted to result in effects of **negligible** and **slight** at the proposed development site.

6.3.2 The risk of potential odour effects at the development was also assessed using the IAQM methodology. This included consideration of the Source Odour Potential, pathway effectiveness and receptor sensitivity. The results of the assessment indicated the predicted odour effect significance was **slight** at the development as a result of emissions from the identified sources. This is consistent with the maximum impact detected during the Field Odour Surveys.

6.3.3 The IAQM guidance[16] states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, the overall effects of odour on the proposed development as a result of emissions from the farm and the industrial estate are considered **not significant**, in accordance with the stated methodology.

16 Guidance on the Assessment of Odour for Planning, IAQM, 2018.

7.0 CONCLUSION

7.1.1 Redmore Environmental Ltd was commissioned by Newett Homes to provide an Odour Assessment in support of a planning application for a residential development on land off Ashbourne Way, Cleckheaton.

7.1.2 The site is located within the vicinity of Lower Blacup Farm and an industrial estate. Concerns were raised by KC regarding the potential for odour emissions from the farm and the industrial estate to affect amenity levels at the development. A two-stage Odour Assessment was therefore undertaken to determine baseline conditions at the site and consider its suitability for the proposed end-use.

7.1.3 Three Field Odour Surveys were undertaken in accordance with the IAQM methodology. The results indicated odour impacts ranging between **negligible** and **small**. This is predicted to result in effects of **negligible** to **slight** at the proposed development site.

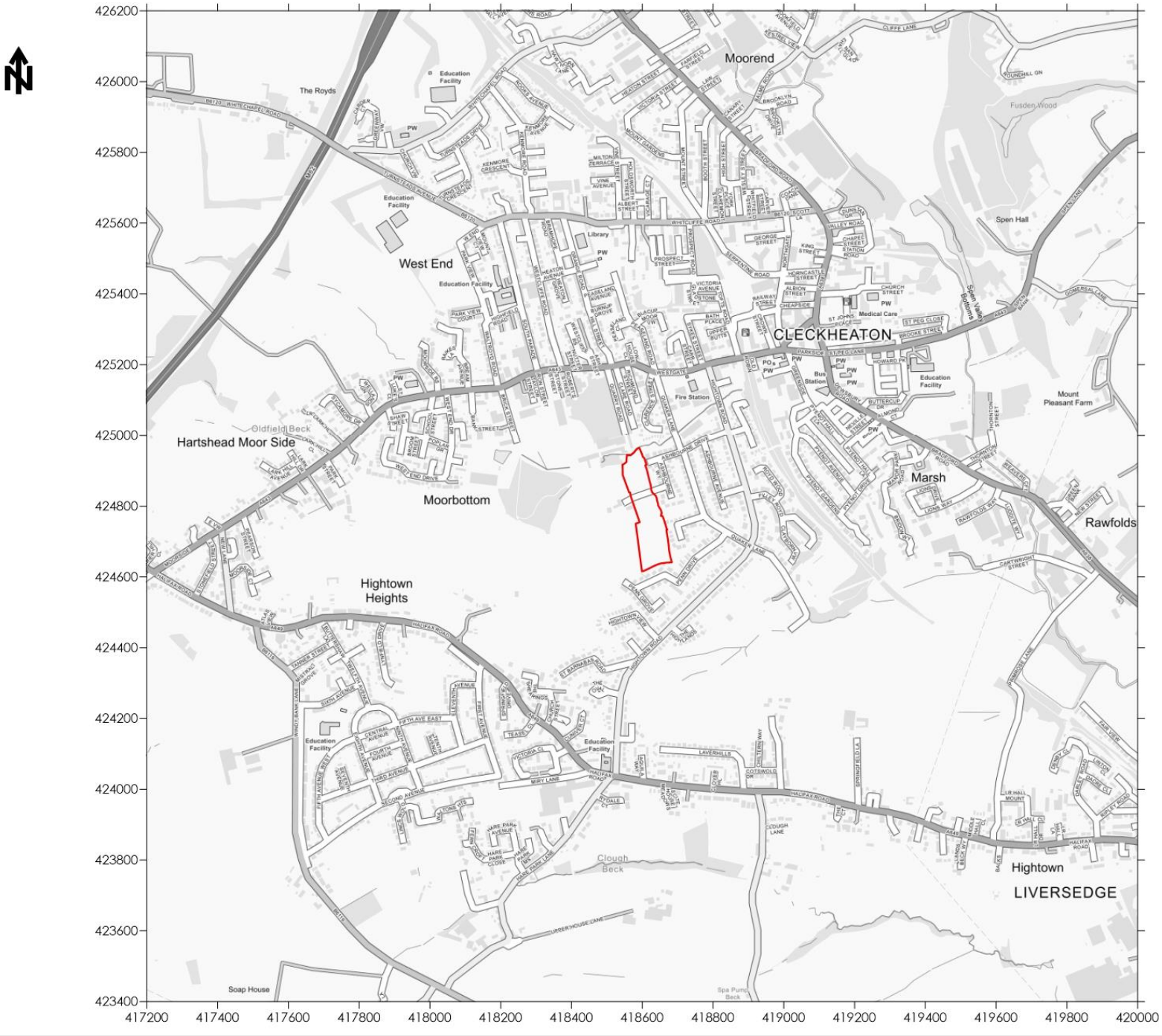
7.1.4 The risk of potential odour effects at the development was assessed using the IAQM methodology. This included consideration of the Source Odour Potential, pathway effectiveness and receptor sensitivity. The results of the assessment indicated the predicted odour effect significance was **slight** at the proposed site, which is consistent with the maximum impact detected during the Field Odour Surveys.

7.1.5 Based on the results of the staged assessment, overall odour effects on the site are considered to be **not significant** in accordance with stated guidance. As such, odour emissions from the identified sources are not considered to represent a constraint to planning consent for the proposals.

8.0 ABBREVIATIONS

EA	Environment Agency
I_{max}	Maximum odour intensity
I_{mean}	Average odour intensity
IAQM	Institute of Air Quality Management
KC	Kirklees Council
NGR	National Grid Reference
NPPF	National Planning Policy Framework
ODT	Odour Detection Threshold
$t_{I\geq4}$	Percentage odour time
STW	Sewage Treatment Works

Figures



Legend

Site Boundary

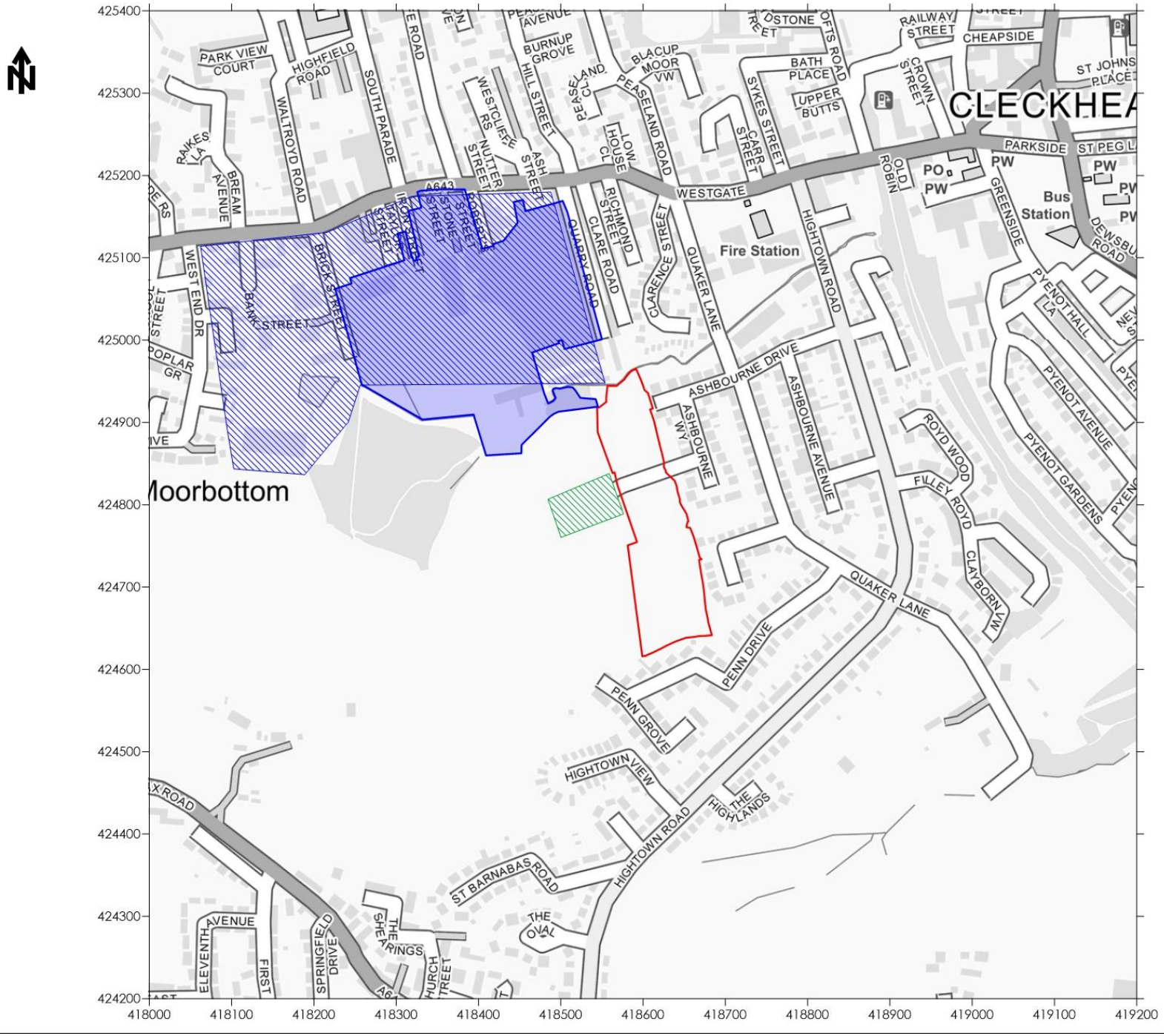
Title
Figure 1 - Site Location Plan

Project
Odour Assessment
Ashbourne Way, Cleckheaton

Project Reference
8156-1

Client
Newett Homes

Redmore environmental
www.red-env.co.uk | 0161 7060075



Legend

- Site Boundary
- Lower Blacup Farm
- Industrial Estate
- Demolished Industrial Area

Title
Figure 2 - Potential Odour Sources

Project
Odour Assessment
Ashbourne Way, Cleckheaton

Project Reference
8156-1

Client
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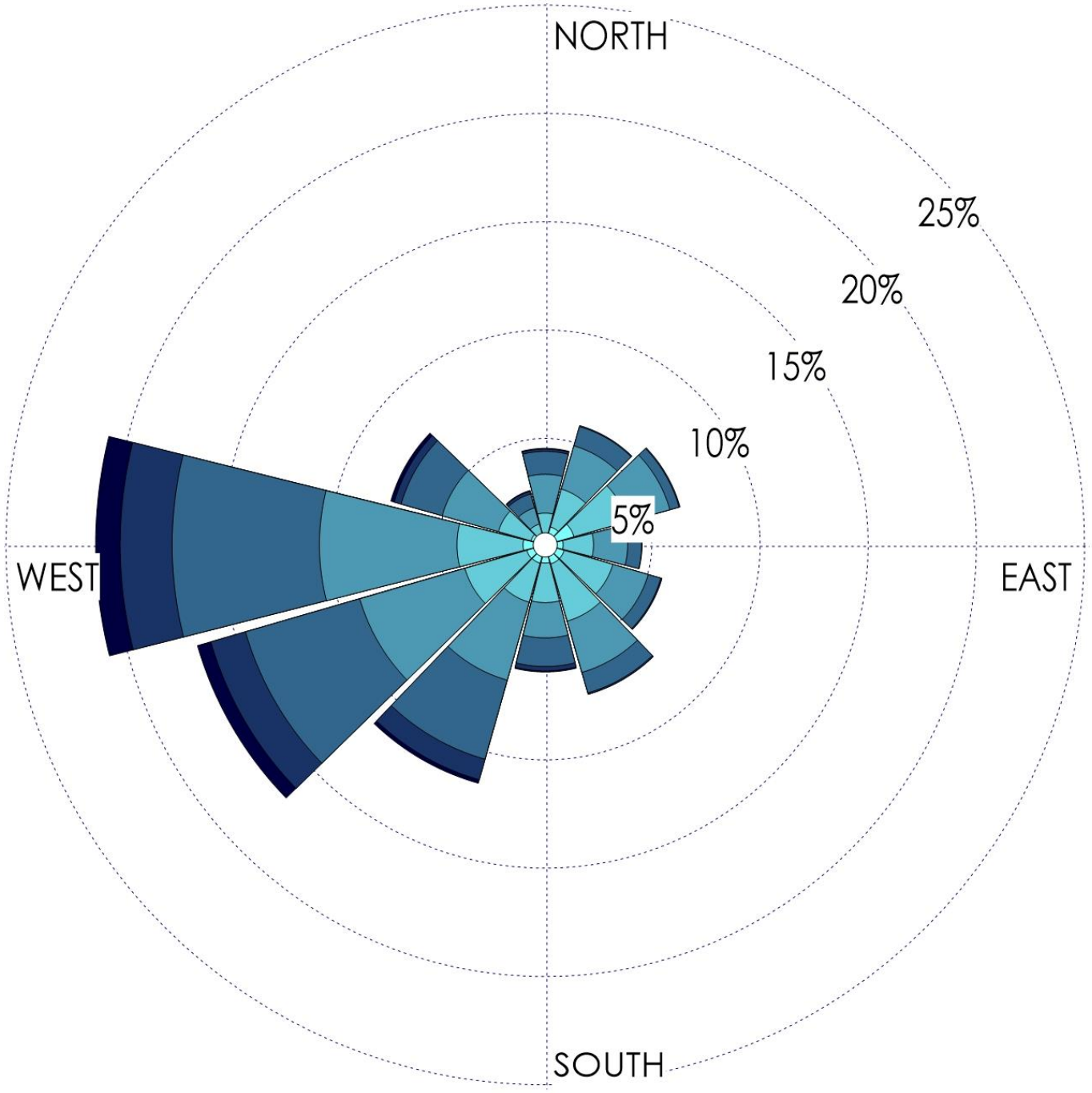

Legend

WIND SPEED (m/s)

- >= 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

Calms: 0.60%

Title

Figure 3 - Wind Rose of 2019 to 2023
Leeds Bradford Airport
Meteorological Data

Project

Odour Assessment
Ashbourne Way, Cleckheaton

Project Reference

8156-1

Client

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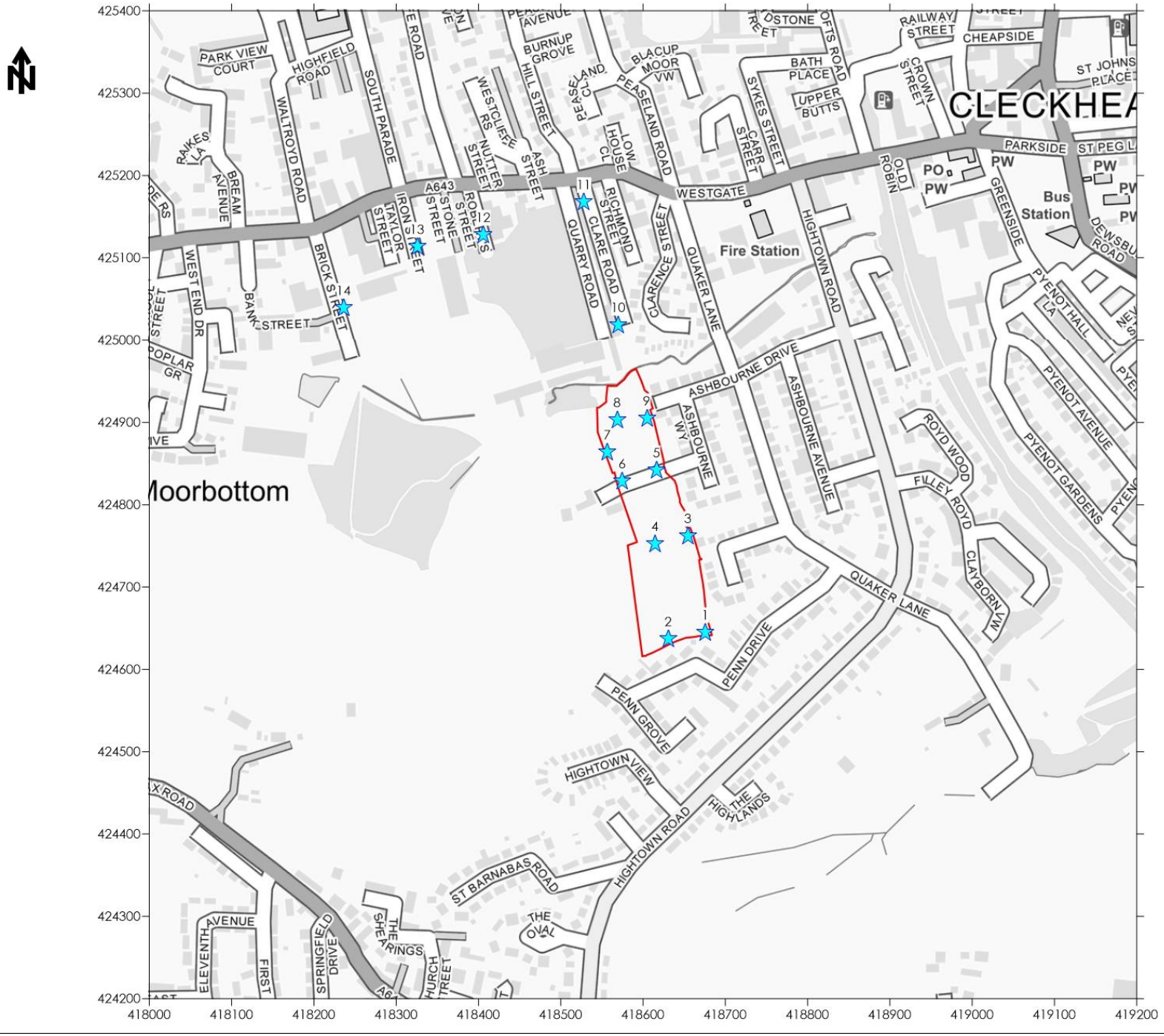

Legend

Site Boundary

Monitoring Location

Title
Figure 4 - Field Odour Survey Positions

Project
Odour Assessment
Ashbourne Way, Cleckheaton

Project Reference
8156-1

Client
Newett Homes

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Legend

- Site Boundary
- Substantial
- Moderate
- Slight
- Negligible

Title
Figure 5 - Field Odour Survey Results

Project
Odour Assessment
Ashbourne Way, Cleckheaton

Project Reference
8156-1

Client
Newett Homes

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Appendix 1 - Curricula Vitae

CERI HAINES

Senior Air Quality Consultant

BSc (Hons), MSc, GradIEMA

Tel: 0161 706 0075 | Email: ceri.haines@red-env.co.uk

KEY EXPERIENCE:

Ceri is an Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Advanced Canyon Modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of construction dust impacts from a range of development sizes.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Warren Street, Stockport

Air Quality Assessment in support of a residential-led development comprising 553 apartments and two commercial units located in an Air Quality Management Area (AQMA). The development had the potential to expose future occupants to poor air quality and cause impacts at sensitive locations. Detailed dispersion modelling and a construction dust assessment indicated air quality factors were not a constraint to the development.

Belgrave Gate, Leicester

Air Quality Assessment in support of the conversion of an existing building to provide three residential units on Belgrave Gate, Leicester. The scheme was located in an AQMA, alongside a bus station. As such, the development had potential to expose future residents to elevated pollution levels and adverse air quality effects. Results of detailed dispersion modelling utilising advanced canyons and a volume source to represent the bus station indicated air quality issues were not a constraint to planning consent for the development.

Kings Arms Hotel, Stansted

Odour Assessment in support of a Discharge of Condition application for a consented development on land to the rear of the Kings Arms Hotel, Stansted. The site was located in close proximity to several fast food restaurants which have the potential to cause odour emissions during normal operation. A mitigation scheme was therefore identified to protect future residents from loss of amenity. Subject to the inclusion of the specified mitigation, overall effects of odour were considered to be not significant at the development.

Manchester Road West, Little Hulton

Odour Assessment in support of construction of 152 residences on land off Manchester Road West, Little Hulton. The development was located in the vicinity of several waste management facilities which may form a source of odour emissions and cause loss of amenity for future residents. A two stage Odour Assessment was undertaken to assess baseline conditions across the site and consider the risk of reduced amenity. Results of the assessment indicated odour effects at the site did not represent a constraint to planning consent.

Gravel Pit Farm, Sand Hutton

Odour Assessment in support of the conversion of existing buildings into two residential dwellings on land at Gravel Pit Farm, Sand Hutton. The development was located in the vicinity of the Sand Hutton Anaerobic Digestion Plant, which may form a source of odour emissions and cause loss of amenity for future residents. Results of a two stage Odour Assessment indicated odour effects at the site were not significant. As such, odour was not considered to represent a constraint to planning consent.

A1 Trunk Road, Long Bennington

Odour Assessment in support of a residential development on land off the A1 Trunk Road, Long Bennington. The development was located in the vicinity of a maggot farm growing bait for fishermen. Results of a two stage Odour Assessment indicated that at the location of the proposed dwellings, impacts were not at a level considered to cause loss of amenity as a result of emissions. As such, odour was not considered to represent a constraint to planning consent.

GER PARRY

Director

BSc (Hons), MIAQM, MIEnvSc

Tel: 0161 706 0075 | Email: ger.parry@red-env.co.uk

KEY EXPERIENCE:

Ger is a Director with specialist experience in the odour and air quality sectors. His key capabilities include:

- Production of Air Quality, Dust and Odour Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) and Institute of Air Quality Management (IAQM) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of industrial sources using ADMS-5 to determine impacts of emissions on local air quality and amenity as a consequence of odour.
- Odour sampling and analysis as part of performance testing for odour abatement plant and mitigation appraisal.
- Odour and dust surveys to assess amenity and suitability of sites for residential development.
- Odour and dust risk assessments to determine odour effect significance in accordance with IAQM Guidance.
- Modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Design and project management of pollutant monitoring campaigns.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.

SELECT PROJECTS SUMMARY:

Industrial

GP Plantscape, Blantyre - Odour Assessment in relation to existing operations at the In-Vessel Composting (IVC) facility operated by the company.

Moir Seafoods, Morpeth - Odour Management Plan prepared to control impacts associated with emissions from the facility operated by the company.

Bioganix, Bonby - Odour Assessment in support of an Environmental Permit Variation for the food waste processing facility operated by the company.

Alne Material Recycling, York - Odour Emissions Monitoring and Odour Assessment undertaken in support of compliance with the Environmental Permit for the facility.

Dryholme Anaerobic Digestion (AD) Plant - Odour Assessment in support of an Environmental Permit Variation for the facility.

Pets Choice, Blackburn - Odour Assessment in support of an Environmental Permit Application for the manufacturing facility operated by the company.

Crofthead Biogas AD Plant - Odour Assessment in support of an Environmental Permit Application for the facility.

Cofresh Snack Foods - Odour Assessment to investigate potential impacts associated with emissions from the manufacturing facility operated by the company.

Tulip Fresh Meats, Ashton-Under-Lyne - Odour consultancy services in support of an Environmental Permit Variation Application for the facility.

Five Ways Road, Warwick - Odour Assessment in support of a planning application for an extension to an existing poultry abattoir.

Residential

Broadnook Garden Suburb, Birstall - Odour Assessment in support of a residential development which involved completion of Field Odour Surveys and a Risk Assessment in accordance with IAQM guidance.

Hungerford House Farm, Madeley - Odour Assessment in support of the conversion of an existing agricultural building to a residential dwelling.

Hales Pasture Farm, Allostock - Odour consultancy services in support of a nuisance claim by the owner of the property.

North Leigh Park, Wigan - Odour Assessment in support of a planning application for residential development.

New Road, Tintwistle - Odour Assessment to evaluate potential impacts at a proposed residential development as a result of emissions from an existing Wastewater Treatment Works (WwTWs).

Land at Mobberley - Odour Assessment to evaluate potential impacts at a proposed residential development as a result of emissions from an existing WwTWs.

Island Carr Road, Brigg - Odour Assessment to evaluate potential impacts at a proposed residential development as a result of emissions from an existing WwTWs.

Moorland Grange Farm, Bingley - Odour Assessment in support of the conversion of an existing agricultural building to a residential dwelling.

Irwell Vale Mill, Ramsbottom - Odour Assessment to evaluate potential impacts at a proposed residential development as a result of emissions from an existing WwTWs.