

Land at Ashley Coombe, Warminster

Odour Assessment



Land at Ashley Coombe Warminster

Odour Assessment

Revision	Date	Notes	Author	Checked	Approved
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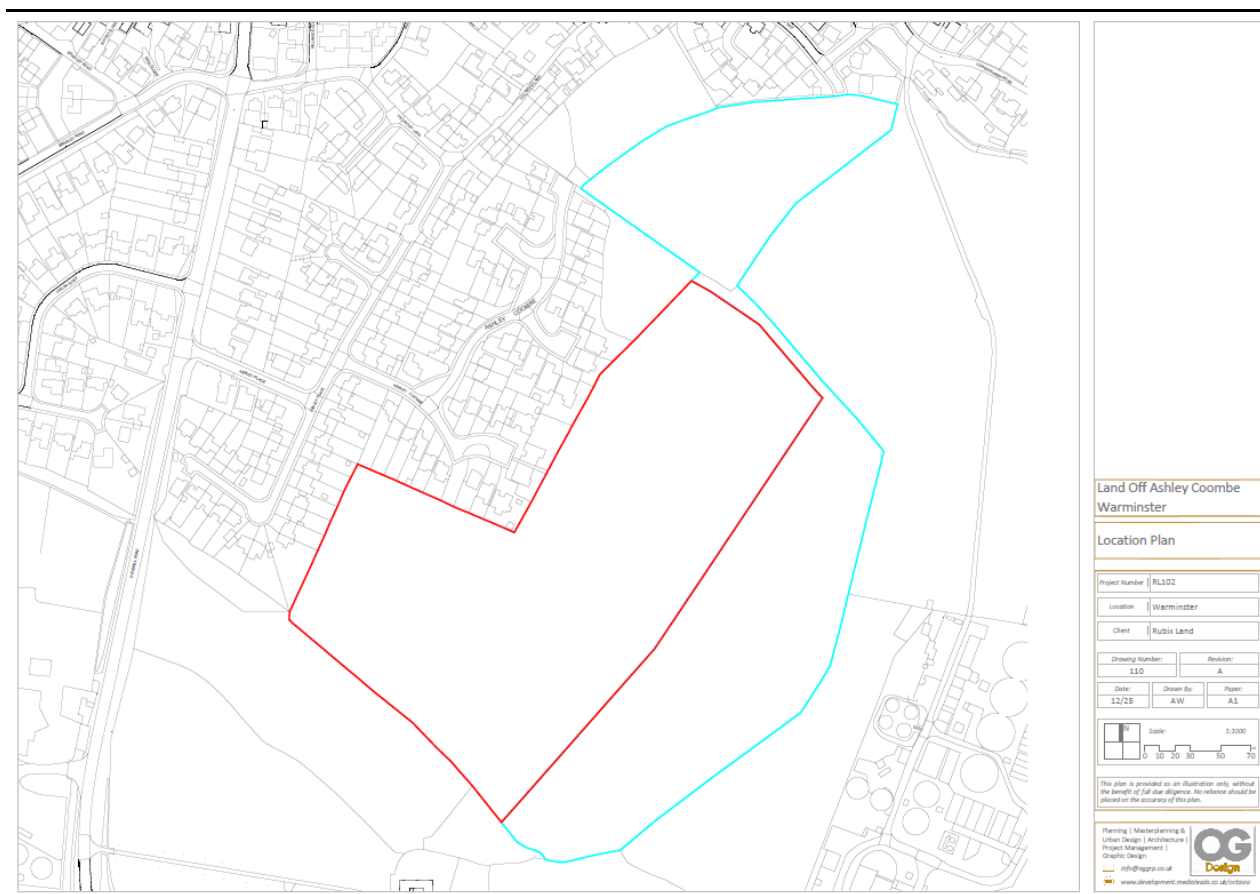


CONTENTS	PAGE
1 Introduction	1
2 Legislation and Policy	2
3 Methodology	6
4 Review of Complaints Data	12
5 Review of Previous Reports	13
6 Assessment	15
7 Conclusions	18
Appendix A: Complaints information Received	19

1 INTRODUCTION

1.1 Entran Limited has been commissioned by Rubix Land Limited to undertake an odour assessment associated with the proposed development of Land at Ashley Coombe in Warminster. The Site lies to the south east of Ashley Coombe, as identified in Figure 1.1.

Figure 1.1: Site Location





2 LEGISLATION AND POLICY

Legislation

The Environmental Protection Act 1990

2.1 Section 79 of the Environmental Protection Act (1990), provides definitions of matters constituting statutory nuisances and requires every local authority to inspect its area from time to time to detect any statutory nuisances which ought to be dealt with under section 80 of the Act. Statutory nuisance is defined as:

- ‘Any dust, steam, smell or other effluvia arising on industrial, trade or business premises or smoke, fumes or gases emitted from premises so as to be prejudicial to health or a nuisance’.

2.2 Section 80 states that where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses.

Planning Policy

National Planning Policy Framework

2.3 The National Planning Policy Framework (NPPF)¹ sets out the Government’s planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. It requires Local Plans to be consistent with the principles and policies set out in the NPPF with the objective of contributing to the achievement of sustainable development.

2.4 The NPPF states that the planning system has three overarching objectives in achieving sustainable development including a requirement to *‘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.’*

¹ Ministry of Housing, Communities and Local Government: *National Planning Policy Framework* (Dec 2024).



2.5 Under Section 15: Conserving and Enhancing the Natural Environment, the NPPF (paragraph 187) requires that *'planning policies and decisions should contribute to and enhance the natural and local environment by ...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible help to improve local environmental conditions such as air and water quality'*

2.6 Paragraph 201 states that *'the focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.'*

Wiltshire Council Local Plan

2.7 Wiltshire Council's Core Strategy was adopted in 2015 and sets out the planning policy framework for Wiltshire up to the year 2026. It does not contain any policies specific to odour.

2.8 WC are currently reviewing their Local Plan, the new draft local plan also does not contain any policies specific to odour.

Guidance

Institute of Air Quality Management Odour Guidance

2.9 The Institute of Air Quality Management (IAQM) released guidance on the assessment of odour for planning in 2018.²

2.10 The guidance is for assessing odour impacts for planning purposes. It provides background information relating to requirements for odour impact assessments and suitable impact criteria and draws from other sources of information such as that described in EPR H4 horizontal odour guidance. Appendix 2 of this guidance provides advice on completing Sniff Test surveys, which is an established and recognised methodology and provides a scale against which the intensity of an odour can be determined and is outlined in Table 2.1 below. This is taken from the German National Standard VDI 3940:1993 Determination of Odorants in Ambient Air by Field Inspection.

² IAQM, Guidance on the Assessment of Odour for Planning, Version 1.1, July 2018.



Table 2.1: Odour Intensity Scale

Odour Strength	Intensity Level	Comments
No odour / not perceptible	0	No odour when compared to clean air
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

2.11 The Odour Detection Threshold (ODT) is 1 odour unit (ou/m³) and considered to fall between intensity level 0 and 1. The recognition threshold intensity is generally 3-10 times higher than the ODT (i.e. 3-10 ou/m³). It is considered to fall between intensity levels 3 and 4.

2.12 The IAQM guidance highlights that the scale of exposure to odour impacts is determined by the parameters collectively known as the FIDO factors (Frequency, Intensity, Duration and Offensiveness). The magnitude of the effect experienced is determined by the scale of exposure (FIDO) and the sensitivity of the receptor (L denoting the location), which is often taken to be a surrogate for the sensitivity and incorporates the social and psychological factors that can be expected for a given community. These are outlined in Table 2.2 below:

Table 2.2: FIDO Factors

FIDO Factors	Description
Frequency	How often an individual is exposed to odour
Intensity	The individual's perception of the strength of the odour
Duration	The overall duration that individuals are exposed to an odour over time
Odour 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 hedonic score.
Location	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.
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2.13 Different combinations of the FIDO factors can result in different exposures at a location. For example, odours may occur as a one-off incident, as frequent short bursts or for longer less frequent periods and may be said to give 'acute' or 'chronic' exposures respectively.

2.14 The IAQM guidance also highlights the technical differences between annoyance and nuisance which are defined as follows:

- Annoyance – the adverse effect occurring from an immediate exposure; and
- Nuisance – the adverse effect caused cumulatively, by repeated events of annoyance.

2.15 The loss of amenity or dis-amenity does not equate directly to nuisance and significant loss of amenity will often occur at lower levels of emission than would constitute a statutory nuisance. A person's annoyance and nuisance response can change over time and is influenced by a wide range of factors including history of exposure.

H4 Odour Management

2.16 The Environment Agency (EA) have published technical guidance for the assessment of odour issues. This guidance³, referred to in this report as H4, provides benchmarks against which predicted odour concentrations can be assessed. It also provides guidance for use in modelling emissions of odour and in undertaking qualitative 'sniff test' assessments.

Defra Odour Guidance for Local Authorities

2.17 Defra has also published a generic odour guidance for local environmental health practitioners. The guidance is largely a reference document that provides advice on identifying odours, perception, the legal context for addressing odours, the regulatory strategy and potential mitigation and abatement measures.

2.18 This Defra guidance⁴ provides further general principles and factors that may be important in assessing when, or if, a specific odour source is likely to constitute a statutory nuisance.

³ Environment Agency (March 2011). Additional guidance for H4 Odour Management. How to comply with your environmental permit.

⁴ Department for Environment, Food and Rural Affairs (Defra) (March 2010). Odour Guidance for Local Authorities.



3 METHODOLOGY

Scope of Assessment

3.1 This sniff test odour assessment seeks to determine whether odours arising from the Westminster WWTW and the Malaby Anaerobic Digestion Plant at Bore Hill Farm are impacting upon the surrounding area with respect to odour and the suitability of the Site for its proposed residential use. This has been determined utilising the methodology outlined below.

3.2 The assessment has been undertaken with reference to the appropriate guidance as discussed in Section 2.

3.3 To inform the assessment, 20 field odour survey 'sniff test' site visits were undertaken to ascertain the odour impacts arising from the WWTW and Anaerobic Digestion Plant identified above. The surveys were undertaken during normal operations, in varying weather conditions and times of day and when the wind was blowing towards the Site from the potential odour sources in order to represent worst-case.

Methodology of Assessment

3.4 There is a complex relationship between odorous emissions, dispersion, perception and nuisance and this relationship has been the subject of extensive research in recent years, both in the UK and abroad. It is clear that nuisance does not occur when an odour is first perceived and the degree to which a person experiences annoyance depends on the characteristics of the odour (i.e. hedonic tone, concentrations and intensity), the sensitivity of the individual and the frequency of exposure. An odorous emission can consist of a single substance or a mixture of substances, both of which can cause offence to members of the public, although the strength and nature of the odour needed to cause annoyance is very subjective.

Field Odour Assessment

3.5 Field odour survey (sniff testing) has been undertaken to determine the existing odour in the vicinity of the Site. Observations have been recorded using the FIDO framework (as outlined by the IAQM guidance), then used to illustrate whether odour is perceived to be a constraint at the Site for residential land use.



3.6 A total of 20 field odour sniff tests were completed between 18th March and 17th December 2025, during different times of the day and night, to account for variability in operational profile of the potential odour sources and differing meteorological conditions.

3.7 The advice provided in Appendix 2 of the IAQM's odour guidance was followed; i.e. the assessor did not have a cold at the time of the site visits, care was taken to avoid strong foods or drinks before the site visits, no scented toiletries were used and the assessor was neither hungry, thirsty or tired at the time of the site visit.

FIDO Framework

3.8 EA, Defra and the IAQM guidance uses the concept of Frequency, Intensity, Duration, Offensiveness and Receptor Sensitivity / Location to assess odour. The use of FIDO provides a useful framework for detailing observations during assessment. Each of the FIDO factors are described in more detail below.

Frequency

3.9 The frequency of an odour relates to how often a receptor may be exposed to odour. If exposed frequently, even a pleasant odour may be perceived as a nuisance. Analysis of local wind direction data has been used to provide an indication of the potential frequency of odour that may be experienced at the Site.

Intensity

3.10 Odour intensity relates to the perceived strength of an odour. The relationship between actual odour concentration and perceived intensity is usually proportional.

3.11 The intensity scale ranges from 'no odour' to 'extremely strong odour' and is derived from the German Standard VDI 3940: 1993, Determination of Odorants in Ambient Air by Field Inspection. This scoring approach is recommended within the relevant guidance documents and is shown in Table 2.1.

Duration

3.12 The amount of time that an odour episode occurs for will influence whether complaints are likely. For this assessment, a qualitative assessment was made as to the duration of the odour during the site visits i.e. whether the odour was intermittent or persistent.



3.13 At each sampling location, the sniff test was conducted for a five-minute period, as recommended in the IAQM guidance. For locations where odour is detected the extent of the odour is established by determining the percentage of time throughout the sampling period that the odour was detectable.

Offensiveness

3.14 The perceived offensiveness of an odour is often referred to as its hedonic tone. The EA's Technical Guidance Note H4 provides details of a scoring system that can be used to measure the hedonic tone of an odour, typically ranging from +4 for very pleasant odours (for example, bakeries) to -4 for foul ones (for example, rotting fish). Neutral odours score 0. A summary of hedonic descriptors is provided within H4 and a more extensive list is provided within the Journal of the Air Pollution Control Association⁵. Sewer odour has been assigned a hedonic score of -3.68 which indicates that the odour would be very unpleasant.

Receptor Sensitivity / Location

3.15 This refers to the receptors potentially affected by the odour, for example, residential dwellings.

3.16 Typically, residential properties or places where people spend a lot of time are more likely to be more sensitive to odours than places where exposure is more short-term. The IAQM guidance includes advice regarding the determination of the sensitivity of a receptor as outlined in Table 3.1 below. This has been used as a guide within this assessment.

Table 3.1: IAQM Factors to determine sensitivity of a receptor

Sensitivity	Description	Example
High Sensitivity Receptor	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 or use of the land.	Residential dwellings, hospitals, schools/education and tourist / cultural
Medium Sensitivity Receptor	Surrounding land where:	Places of work, commercial / retail premises and playing / recreational fields

⁵ Journal of the Air Pollution Control Association (2012). Hedonics of Odors and Odor Descriptors.



Sensitivity	Description	Example
	- Users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or - People wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.	
Low Sensitivity Receptor	Surrounding land where: - The enjoyment of amenity would not reasonably be expected; or - There is transient exposure, where people would reasonably be expected to be present for limited periods of time as part of the normal pattern of use of the land	Industrial use, farms, footpaths and roads

Determination of Odour Exposure and Likely Effect

3.17 The IAQM guidance provides advice on determining the odour exposure at a receptor based on the intensity and duration of the odour experienced. This advice is reproduced in Table 3.2 below and has been used as a guide within this assessment.

Table 3.2: IAQM Matrix to assess the odour exposure of a receptor

Average Intensity	% time odour experienced during sampling				
	≤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	N/A	N/A	Small	Small	Small

3.18 The IAQM guidance also provides advice on determining the likely effect of the odour experienced at individual receptors taking into account the odour exposure and the receptor sensitivity. This has been reproduced in Table 3.3 below. The IAQM guidance recommends that professional judgement is used to determine the significance of the odour effect on the development as a whole taking into account the likely different magnitudes of effect that occur at different receptors.

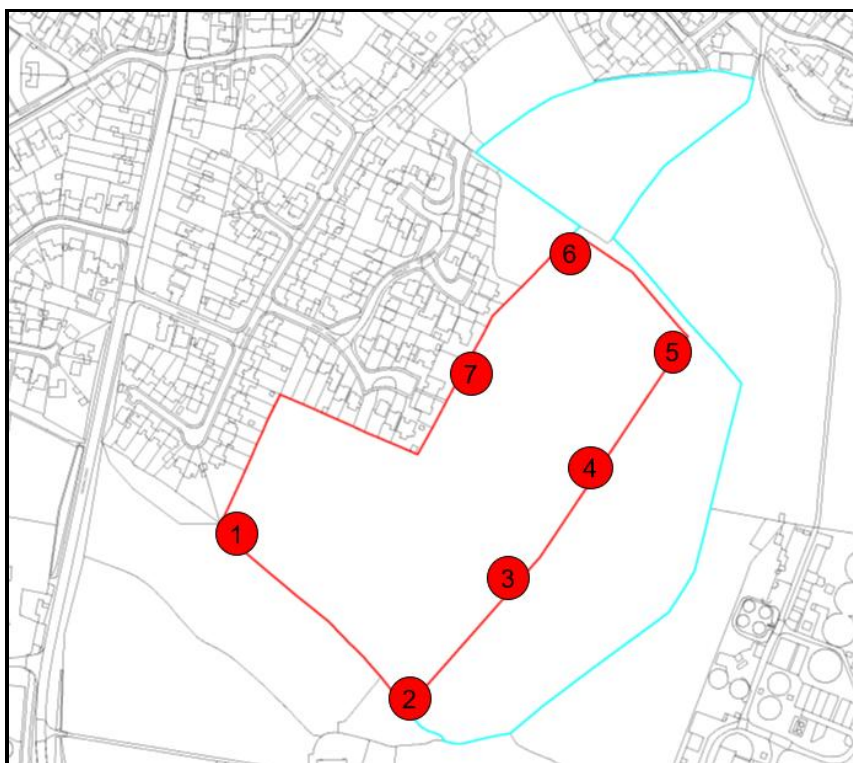
Table 3.3: IAQM Matrix to assess the odour effect at individual receptors

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

Sniff test Surveys

3.19 Ten sniff test surveys were undertaken at the Site between 18th March and 17th December 2025. The the locations of the Sniff tests are identified in Figure 3.1.

Figure 3.1: Sniff test survey locations:



3.20 The dates, times and meteorological conditions during each of the surveys are identified in Table 3.4.



Table 3.4: Summary of Weather Conditions during Surveys

Date & Start Time	Temperature (°C)	Wind Speed and Direction
18 th March 2025, 08:30	10°C	16mph, SSE
15 th April 2025, 14:00	10°C	8mph, SE
17 th April 2025, 12:00	12°C	13mph, SSE
22 nd April 2025, 16:00	14°C	14mph, S
1 st May 2025, 10:30	22°C	8mph, S
12 th May 2025, 14:30	19°C	9mph, SE
2 nd June 2025, 09:00	15°C	11mph, S
1 th June 2025, 17:30	14 °C	10mph, S
13 th June 2025, 13:00	19°C	7mph, ESE
21 st June 2025, , 16:30	17 °C	12mph, SSE
20 th November 2025, 23:00	3 °C	9mph, SSE
22 nd November 2025, 18:00	7°C	8mph, SW
26 th November 2025, 21:00	8°C	12 mph, SW
1 st December 2025, 16:30	9°C	15mph, SW
2 nd December 2025, 19:30	6°C	7mph, S
3 rd December 2025, 19:30	7°C	8mph, SSE
7 th December 2025, 23:00	10°C	11mph, SW
13 th December 2025, 21:00	7°C	9mph, WSW
15 th December 2025, 15:00	12°C	15mph, S
17 th December 2025, 21:00	10°C	13mph, SSW

Note

Wind Direction is the direction the wind is blowing from.



4 REVIEW OF COMPLAINTS DATA

4.1 Details of odour complaints made to Wiltshire Council with regards to odour were requested. The response from the Council is reproduced in **Appendix A**.

4.2 WC have received one odour complaint with regards to the WWTW in the past 3 years. The complaint was made anonymously so it was not possible to determine the location of the odour event. The complaint was also not verified by the Council.

4.3 Wessex Water were also contacted directly to obtain details of any odour complaints over the last 3 years and they have confirmed that none have been received, as identified in **Appendix A**.

5 REVIEW OF PREVIOUS REPORTS

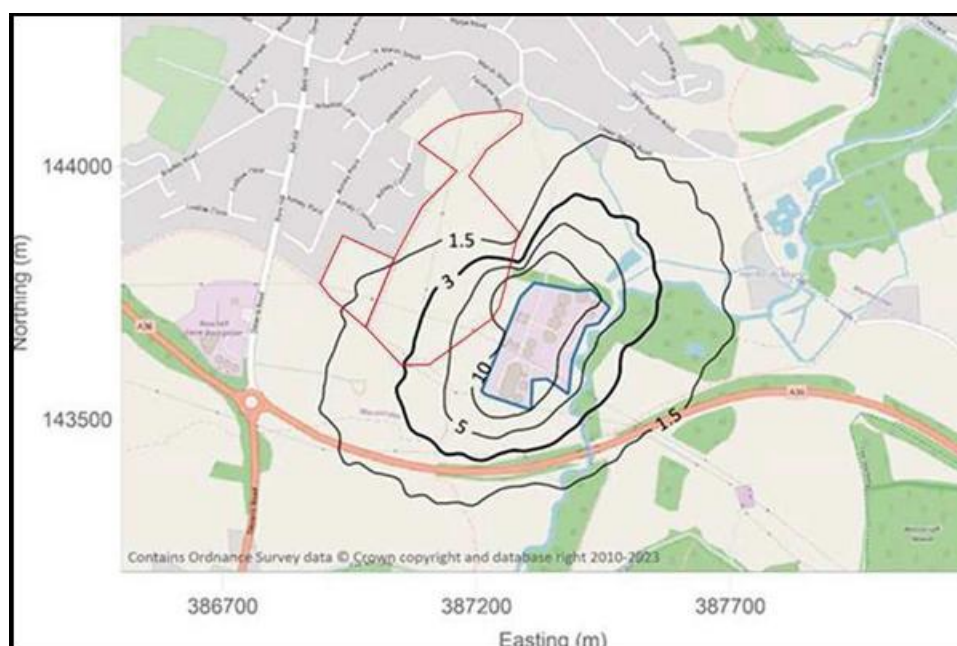
Wardell Armstrong Odour Assessment (Sept 2023)

5.1 Wardell Armstrong previously undertook an assessment of odour for the Site in 2023 to provide information in support of the Regulation 19 representations with a view to ascertaining the suitability of the Site to be allocated within the Wiltshire Local Plan.

5.2 The assessment comprised consultation with Wessex Water (WW), the operator of the Warminster WWTW and review of modelling undertaken by WW.

5.3 The assessment determined that the odour arising from the WWTW would be classed as 'moderately offensive' rather than 'most offensive'. The H4 benchmark odour criteria define 'most offensive' odours from WWTW as processes involving septic effluent or sludge. The Wardell Armstrong assessment stated that the information provided by WW indicated that neither such odour sources are present at the Warminster WWTW. In accordance with the IAQM guidance an odour benchmark criterion of $3 \text{ OU}_E/\text{m}^3$ as the 98th percentile of hourly mean concentrations was used to determine whether complaints would be likely.

5.4 The modelling undertaken by WW was reviewed, the modelling considered the latest 5 years of meteorological data between 2018 and 2022. A contour plot was provided indicating where the odour concentrations would likely fall above the benchmark of $C_{98, 1\text{hour}} 3 \text{ OU}_E/\text{m}^3$ as illustrated below.





5.5 As illustrated in the figure, the $C_{98, 1 \text{ hour}} 3 \text{ OU}_E/\text{m}^3$ isopleth falls within the site being considered for allocation by the Regulation 19 Representation. The Wardell Armstong report concludes that this area of land would not be suitable for residential development.

5.6 It should be noted that the Site comprises the area of the site considered within the Regulation 19 Representation that falls outside the $C_{98, 1 \text{ hour}} 3 \text{ OU}_E/\text{m}^3$ isopleth, the entire Site within the proposed red line boundary as indicated in Figure 1.1 and can therefore be considered to be suitable for residential development based on these modelling results.

6 ASSESSMENT

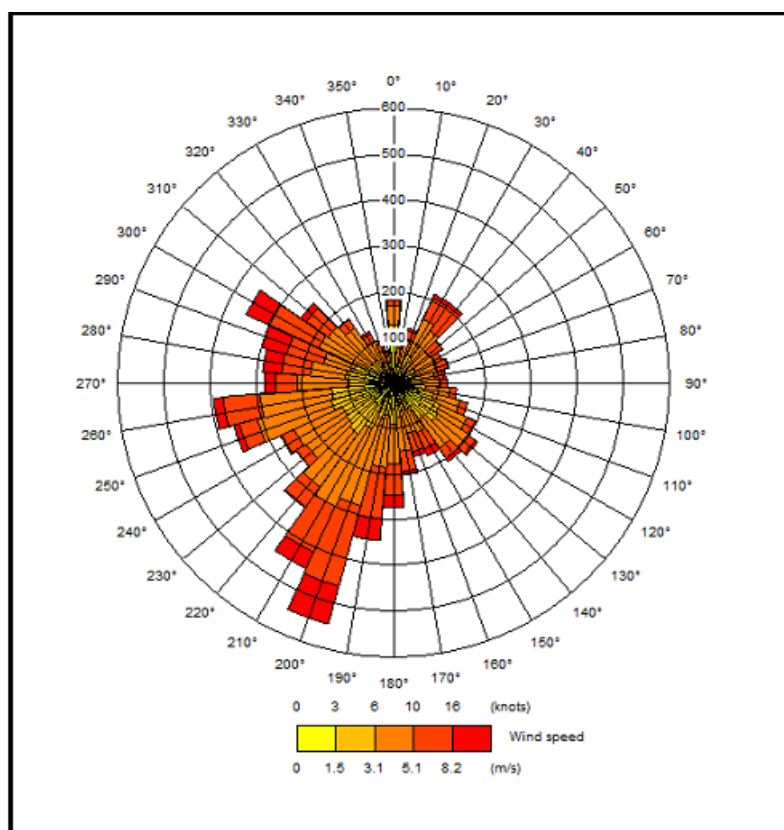
Sniff Test Results

6.1 No odour was detected at any of the sniff test locations during any of the 20 sniff test site surveys.

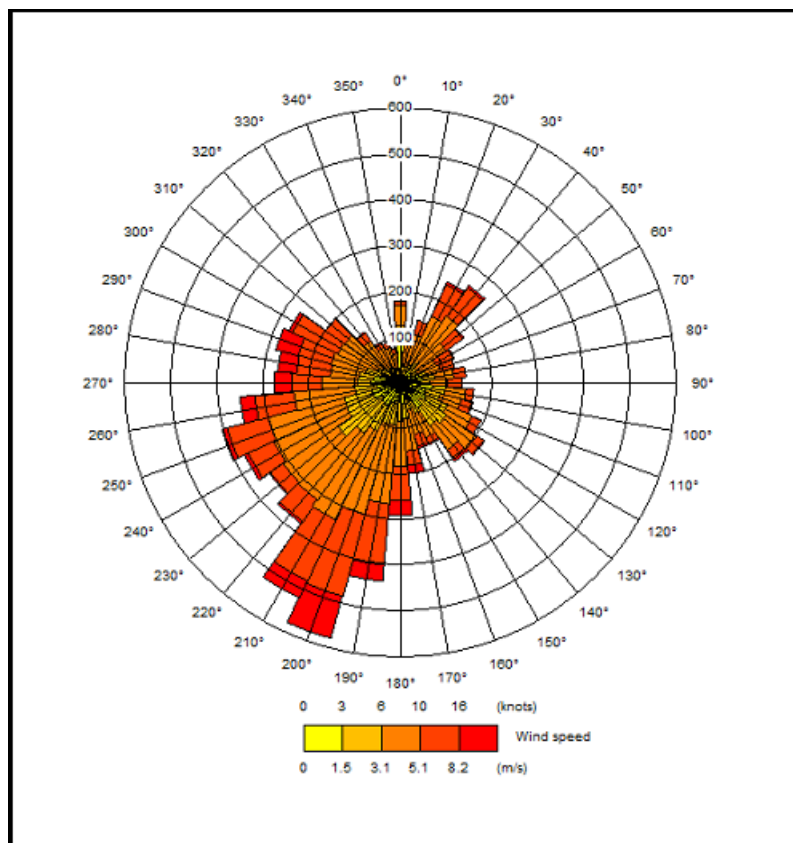
Met Data Review

6.2 Windroses from the meteorological station in Yeovilton.

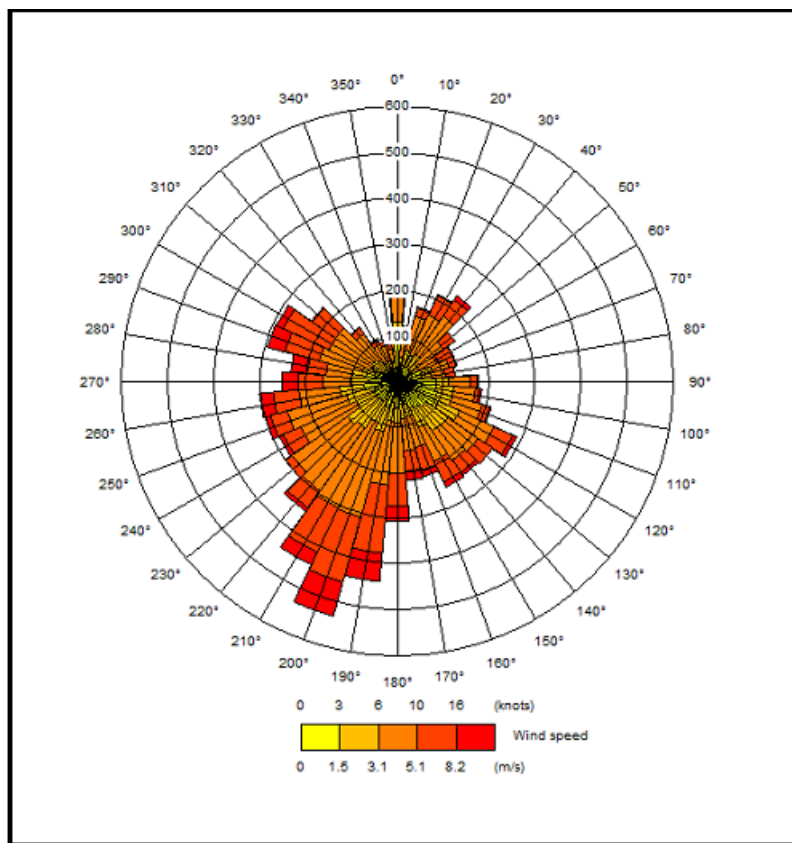
Windrose from Yeovilton for the Year 2024



Windrose from Yeovilton for the Year 2023



Windrose from Yeovilton for the Year 2022



6.3 As illustrated in the Windroses, the prevailing wind direction is from the southwest.

6.4 Odour arising from the potential odour sources would most likely to be detected at the Site when the wind is blowing from the direction of the WWTW or Anaerobic Digestion Plant towards the Site. The WWTW is located to the southeast of the Site and the Anaerobic Digestion Plant to the southwest. Analysis of the met data has shown that over the past 3 years analysed, the wind was blowing from the WWTW towards the Site for approximately 12% of the time.

6.5 Odour concentrations tend to be higher in very light or calm winds, analysis of the met data has shown that over the past 3 years, light or calm winds were blowing from the direction of the potential odour sources towards the Site for approximately 1% of the time.



7 CONCLUSIONS

7.1 A total of 20 sniff test surveys were carried out at 7 locations around the perimeter of the Site including locations closest to the WWTW and Anaerobic Digestion Plant. Care was taken to ensure that the sniff tests were completed when the wind direction was blowing from the direction of these potential sources towards the Site, during different seasons, including the warmer summer months when it is likely any odour arising from these facilities would be at its highest and during the day and night. No odour was detected at the Site during any of the site surveys.

7.2 One complaint has been received by WC in the past 3 years. The complaint was made anonymously, therefore the location of the odour incident could not be determined and the complaint was also not verified by WC. No odour complaints have been received by Wessex Water over the last 3 years.

7.3 Review of the modelling assessment completed by WW concluded that the current area of the site proposed for development falls outside the area predicted to experience odour concentrations above 3 OU_E/m³.

7.4 Based on the information above and the substantial amount of field sniff tests, carried out through different seasons of the year, it is concluded that odour does not adversely impact the Site. It is therefore concluded that the Site is suitable for its proposed residential use with regards to odour.



APPENDIX A: COMPLAINTS INFORMATION RECEIVED



APPENDIX A: COMPLAINTS INFORMATION RECIEVED

RE: Request for Complaints Data

From Warren, Brett <brett.warren@wiltshire.gov.uk>

Date Tue 27/05/2025 09:35

To Alison Banks <AlisonBanks@entranltd.co.uk>

Hello Alison

Following your request, I have searched our database for odour complaints received in relation to the Warminster WWTW within the last 3 years.

We have a record of one odour complaint against the site, but this was from an anonymous person so I don't have the address of the complainant.

Best wishes

Brett Warren CEnvH
Principal Environmental Health Officer
Environmental Control and Protection



DD: 01225 770581
brett.warren@wiltshire.gov.uk
www.wiltshire.gov.uk



From: Planning Liaison <planning.liaison@wessexwater.co.uk>

Sent: 08 September 2025 12:34

To: Nick Davey <nickdavey@entranltd.co.uk>

Subject: RE: Complaints data

Dear Nick,

Further to your recent enquiry regarding the Wessex treatment works in Warminster, I can confirm that there have been no odour complaints received for Warminster WRC in the last three years.

Wessex Water have been commenting on possible allocation of land for housing development in the area. Due to historical complaints there is the potential that encroachment could lead to future odour complaints.

If your development is within the buffer zone an odour assessment must be completed in line with Wessex Water odour assessments procedures to make sure the assessment is meeting Wessex Water requirements.

There is also a fly nuisance buffer zone that must also be complied with.

I hope this answers your question.

With kind regards,

Hayley Freeman

Planning Liaison Technician



Wessex Water

Operations Centre, Claverton Down, Bath BA2 7WW

Web ytl.com | wessexwater.co.uk



