

Odour Assessment
Samlesbury Aerodrome, Samlesbury

Client: Philip Dunbavin Acoustics Limited

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Executive Summary

Redmore Environmental Ltd was commissioned by Philip Dunbavin Acoustics Limited to undertake an Odour Assessment in support of the installation of a new resin oven and associated extract flue at BAE Systems, Samsbury Aerodrome, Samsbury.

Odour emissions from the extract flue have the potential to cause impacts at sensitive locations in the vicinity of the site. An Odour Assessment was therefore undertaken to evaluate potential effects as a result of the proposals.

The risk of potential odour impact was assessed using a standard industry method. This involved consideration of a number of factors relating to the development including the scale and nature of the potential emission source, the location of sensitive receptors and the prevailing meteorological conditions.

Following consideration of the relevant factors, overall effects as a result of emissions from the extract flue were not predicted to be significant. As such, potential odour impacts are not considered to represent a constraint to the proposals.

Table of Contents

1.0	INTRODUCTION	1
1.1	Background	1
1.2	Site Location and Context	1
2.0	ODOUR BACKGROUND	3
2.1	Odour Definition	3
2.2	Odour Impacts	3
2.3	Odour Legislative Control	4
4.2	National Planning Policy	5
4.3	Local Planning Policy	6
4.4	Institute of Air Quality Management Guidance	7
5.0	METHODOLOGY	8
5.1	Introduction	8
5.2	Background	8
5.3	Risk Assessment Procedure	9
6.0	BASELINE	14
6.1	Introduction	14
6.2	Site Description	14
6.3	Sensitive Receptors	14
6.4	Meteorological Conditions	15
7.0	ASSESSMENT	17
8.0	CONCLUSION	20
9.0	ABBREVIATIONS	21

Appendix

Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Philip Dunbavin Acoustics Limited to undertake an Odour Assessment in support of the installation of a new resin oven and associated extract flue at BAE Systems, Samlesbury Aerodrome, Samlesbury.

1.2 Site Location and Context

1.2.1 The proposed development is located at BAE Systems, Samlesbury Aerodrome, Samlesbury, BB2 7LF, at approximate National Grid Reference (NGR): 362014, 431179. Reference should be made to Figure 1 for a map of the site and immediate surrounding area.

1.2.2 The proposals comprise the installation of a new resin oven and associated extract flue within Unit 2 at the site. The oven will be used for the following purposes:

- Preheating of viscous resins so they can be decanted into production size quantities;
- Heating cured carbon fibre parts to remove moisture prior to further processing; and,
- Post curing of previously cured carbon fibre parts from an autoclave.

1.2.3 The specific operating schedule for the oven has not yet been finalised. However, it is anticipated that the plant will operate up to three times per week during normal working hours.

1.2.4 The oven will include a Local Exhaust Ventilation (LEV) system designed to capture and remove emissions generated during the heating and curing processes. Extracted emissions will be discharged to atmosphere via a dedicated flue fitted with a high-velocity jet cowl. The flue will terminate approximately 3.7m above the roof at the point of egress and 1.5m above the ridge height of the building.

1.2.5 Emissions will be discharged to atmosphere vertically from the flue at a minimum efflux velocity of 15m/s to ensure a suitable level of dispersion. Reference should be made to Figure 1 for the proposed flue location.

1.2.6 There is the potential for odour emissions from the extract flue during normal operation and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour Assessment has been undertaken to evaluate potential effects and determine the requirement for any mitigation to control impacts to an acceptable level. This is provided in the following report.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance¹ 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, is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM² as follows:

- **F**requency - 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** 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 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 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 considered further to provide the following issues in regard 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 to restrict odour impacts beyond the site boundary is by the relevant regulator, either the Environment Agency (EA) for Part A(1) activities and waste operations, 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, culminating in the revocation of the Environmental Permit and cessation of all activities on site.

2.3.3 The BAE Systems site is already regulated under a Part A(1) Environmental Permit issued by the EA (EPR/BV0414IV), which authorises a number of activities specified under Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2016. The site also holds two Part B Environmental Permits (RVBC/PPC/13 and RVBC/PPC/63) issued by Ribble Valley Borough Council (RVBC), which authorise coating and degreasing activities.

2.3.4 The proposed oven and associated flue are expected to be incorporated within the site's existing environmental permitting framework. The precise permitting mechanism and any requirements for permit variation or additional authorisation will be determined by the relevant regulator. However, emissions associated with the proposed activities will be subject to the requirements of the Environmental Permitting (England and Wales) Regulations 2016 and will therefore be required to be managed and controlled using appropriate measures to prevent impacts on the surrounding environment and sensitive receptors.

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 Framework³ (NPPF) was published in December 2024 and amended in February 2025. The document sets out the Government's planning policies for England and how these are expected to be applied.

2.4.2 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

³ NPPF, Ministry of Housing, Communities and Local Government, 2024.

mitigating and adapting to climate change, including moving to a low carbon economy."

2.4.3 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."

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

2.5 Local Planning Policy

2.5.1 The Local Development Framework (LDF) provides the basis for planning decisions in the Ribble Valley. The Core Strategy⁴, adopted on 16th December 2014, forms the central document of the LDF. Review of the Core Strategy⁵ indicated the following policy of relevance to this assessment:

"Policy DMG1: General Considerations

In determining planning applications, all development must:

[...]

- Consider the density, layout and relationship between buildings, which is of major importance. Particular emphasis will be placed on visual appearance and the relationship to surroundings, including impact on landscape character, as well as the effects of development on existing amenities.

⁴ Core Strategy 2008 - 2028 A Local Plan for Ribble Valley, RVBC, 2014.

⁵ Core Strategy 2008 - 2028 A Local Plan for Ribble Valley, RVBC, 2014.

- Not adversely affect the amenities of the surrounding area. [...]"

2.5.2 The above policy was 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 2018⁷ 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 **METHODOLOGY**

3.1 **Introduction**

3.1.1 Odour emissions associated with the proposed extract flue may have the potential to cause impacts at sensitive locations in the vicinity of the site. The potential risk of adverse effects has therefore been assessed using the IAQM 'Guidance on the Assessment of Odour for Planning v1.1'⁸ document. The relevant methodology is summarised in the following Sections.

3.2 **Background**

3.2.1 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.

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

$$\text{Effect} \approx \text{Dose} \times \text{Response}$$

3.2.3 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.

3.2.4 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;

⁸ Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

- 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.

3.2.5 It is considered that all of these criteria are met for this project. As such, a qualitative assessment methodology was deemed appropriate.

3.3 Risk Assessment Procedure

3.3.1 The first step in the assessment was 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.

3.3.2 Using the example risk ranking in Table 1, the Source Odour Potential was categorised as **small, medium** or **large**.

Table 1 Source Odour Potential

Source Odour Potential	Comments
Large	<p>Magnitude - Larger Environmentally Permitted processes of odorous nature or large Sewage Treatment Works (STWs); materials usage hundreds of thousands of tonnes/m³ per year; area sources of thousands of m². The compounds involved are very odorous (e.g. mercaptans), having very low ODTs where known</p> <p>Unpleasantness - processes classed as "Most offensive" in Environment Agency (EA) Guidance H4⁹; or (where known) compounds/odours having unpleasant (-2) to very unpleasant (-4) hedonic score</p> <p>Mitigation/control - open air operation with no containment, reliance solely on good management techniques and best practice</p>
Medium	<p>Magnitude - Smaller Environmentally Permitted processes or small STWs; materials usage thousands of tonnes/m³ per year; area sources of hundreds of m². The compounds involved are moderately odorous</p> <p>Unpleasantness - processes classed in EA Guidance H4¹⁰ as "Moderately offensive"; or (where known) odours having neutral (0) to unpleasant (-2) hedonic score</p> <p>Mitigation/control - some mitigation measures in place, but significant residual odour remains</p>
Small	<p>Magnitude - Falls below Environmental Permit Part B threshold; materials usage hundreds of tonnes/m³ per year; area sources of tens m². The compounds involved are only mildly odorous, having relatively high ODTs where known</p> <p>Unpleasantness - processes classed as "Less offensive" in EA Guidance H4¹¹; or (where known) compounds/odours having neutral (0) to very pleasant (+4) hedonic score</p> <p>Mitigation/control - effective, tangible mitigation measures in place leading to little or no residual odour</p>

3.3.3 The next step was 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.

3.3.4 Using the example risk ranking in Table 2, the pollutant pathway from source to receptor was categorised as **ineffective**, **moderately effective** or **highly effective**.

Table 2 Pathway Effectiveness

Pathway Effectiveness	Comments
Highly effective	<p>Distance - receptor is adjacent to the source/ site; distance well below any official set-back distances</p> <p>Direction - high frequency of winds from source to receptor, or, qualitatively, receptors downwind of source with respect to prevailing wind</p> <p>Effectiveness of dispersion/dilution - open processes with low-level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes</p>
Moderately effective	<p>Distance - receptor is local to the source</p> <p>Where mitigation relies on dispersion/dilution - releases are elevated, but compromised by building effects</p>
Ineffective	<p>Distance - receptor is remote from the source; distance exceeds any official set-back distances</p> <p>Direction - low frequency of winds from source to receptor, or, qualitatively, receptors upwind of source with respect to prevailing wind</p> <p>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</p>

3.3.5 The sensitivity of the receiving receptor was defined based on the criteria shown in Table 3.

Table 3 Odour Receptor Sensitivity

Sensitivity	Description
High	Surrounding land where: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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

3.3.6 The estimates of Source Odour Potential and Pathway Effectiveness were considered together to predict the risk of odour exposure (impact) at the receptor location, as shown by the matrix in Table 4.

Table 4 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

3.3.7 The final step was to determine the significance of odour effect at the specified receptor location through the interaction between sensitivity and risk, as outlined in Table 5.

Table 5 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

3.3.8 The IAQM guidance¹² states that an assessment must reach a conclusion on the likely significance of the predicted impact. 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 is **significant** or it is **not significant**. This has been considered to determine the overall significance of potential odour effects associated with the development.

3.3.9 The IAQM guidance recognises that assessment of odour requires some degree of professional judgement¹³. 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.

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

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

4.0 **BASELINE**

4.1 **Introduction**

4.1.1 Existing conditions at the proposed development were identified in order to provide a baseline for the assessment. These are detailed in the following Sections.

4.2 **Site Description**

4.2.1 The proposed development is located at Unit 2 within the existing BAE Systems facility at Samlesbury Aerodrome. The immediate surrounding area is characterised predominantly by operational industrial units associated with the wider BAE Systems complex.

4.2.2 The nearest sensitive receptors comprise residential properties located approximately 50m south of the proposed development, including the farmhouse associated with Wood Farm. Agricultural land extends beyond these properties, with further residential dwellings located approximately 650m to the south off Preston New Road.

4.2.3 Samlesbury Sports & Social Canberra Club is situated approximately 420m north of the development. To the west, beyond Myerscough Smithy Road, are the Bluebird Inn public house and Stuart Taylor International, a commercial ground care equipment supplier. The wider surrounding area comprises a mixture of agricultural land, farms and residential properties.

4.3 **Sensitive Receptors**

4.3.1 A desk-top study was undertaken order to identify the closest sensitive locations in the vicinity of the site that required specific consideration during the assessment. These are summarised in Table 6.

Table 6 Sensitive Receptors

Receptor		NGR (m)		Sensitivity	Distance from Site (m)
		X	Y		
R1	Residential - off Myerscough Smithy Road	362030	431108	High	50

Receptor		NGR (m)		Sensitivity	Distance from Site (m)
		X	Y		
R2	Residential - Wood Farm	361992	431107	High	55
R3	Commercial - Stuart Taylor International	361846	431196	Medium	150
R4	Commercial - Bluebird Inn	361864	431222	Medium	140
R5	Commercial - Samlesbury Sports & Social Canberra Club	362147	431553	Medium	400
R6	Residential - Rigby Fold	361692	431538	High	480

4.3.2 Reference should be made to Figure 2 for a map of the identified sensitive receptor locations.

4.4 Meteorological Conditions

4.4.1 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 obtained from Blackpool Airport Meteorological Station at NGR: 332308, 430915, which is approximately 30.4km west of the development. 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.

4.4.2 Meteorological data was obtained from Blackpool Airport Meteorological Station over the period 1st January 2020 to 31st December 2024 (inclusive). This is summarised in Table 7. Reference should be made to Figure 3 for a wind rose of the meteorological data.

Table 7 Wind Frequency Data

Wind Direction (°)	Frequency of Wind (%)
345 - 15	4.57
15 - 45	3.62
45 - 75	3.70

Wind Direction (°)	Frequency of Wind (%)
75 - 105	7.56
105 - 135	10.49
135 - 165	8.34
165 - 195	8.72
195 - 225	5.78
225 - 255	9.24
255 - 285	14.75
285 - 315	12.05
315 - 345	9.27
Sub-Total	98.09
Calms	0.77
Missing/Incomplete	1.15

4.4.3 As shown in Table 7, 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.

4.4.4 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.

5.0 **ASSESSMENT**

5.1.1 The development has the potential to cause odour impacts at sensitive locations in the vicinity of the site. The risk of potential adverse effect was therefore assessed in accordance with the previously stated IAQM methodology¹⁴.

5.1.2 The first step was to classify the Source Odour Potential. This was categorised as **medium** for the following reasons:

- Odours associated with resin heating and curing processes are likely to be classified as 'moderately offensive' in accordance with EA Guidance H4¹⁵;
- The proposed resin heating and curing processes will take place entirely within an enclosed oven located inside an existing building, which will provide containment of emissions associated with the activities;
- The oven will incorporate a dedicated LEV system designed to capture and remove emissions generated during the heating and curing processes prior to discharge to atmosphere;
- Extracted emissions will be discharged vertically via a dedicated flue fitted with a high-velocity jet cowl terminating above the roof ridge of the building in order to promote effective dispersion. Emissions will be discharged at a minimum efflux velocity of 15m/s; and,
- The oven is expected to operate intermittently, with operation anticipated to occur up to three times per week during normal working hours.

5.1.3 It should be noted that a number of the above characteristics are consistent with the IAQM criteria for **small** source odour potential. These include the intermittent nature of the process, the enclosure of operations within a building and the implementation of dedicated extraction and high-level dispersion, which would ordinarily reduce the overall potential for off-site odour effects. However, notwithstanding these factors, a **medium** source odour potential has been adopted within the assessment in order to ensure a robust and worst-case approach.

¹⁴ Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

¹⁵ H4: Odour Management, EA, 2011.

5.1.4 The Pathway Effectiveness was subsequently defined based on the separation distance between the source and the sensitive receptor locations, the prevailing meteorological conditions and the emission dispersion arrangements. This is summarised in Table 8. It should be noted that in all cases, the high-level emission dispersion arrangements and efflux velocity were considered as relevant. These are not repeated in Table 8 for reasons of brevity.

Table 8 Pathway Effectiveness

Receptor		Pathway Effectiveness	Justification
R1	Residential - off Myercough Road	Moderately effective	Receptor is local to the source, approximately 50m to the south Receptor is not located downwind of the source with respect to prevailing meteorological conditions
R2	Residential - Wood Farm	Moderately effective	Receptor is local to the source, approximately 55m to the south Receptor is not located downwind of the source with respect to prevailing meteorological conditions
R3	Commercial - Stuart Taylor International	Moderately Effective	Receptor is local to the source, approximately 150m to the west Receptor is not located downwind of the source with respect to prevailing meteorological conditions
R4	Commercial - Bluebird Inn	Moderately effective	Receptor is local to the source, approximately 140m to the west Receptor is not located downwind of the source with respect to prevailing meteorological conditions
R5	Commercial - Samlesbury Sports & Social Canberra Club	Ineffective	Receptor is distanced from the source, approximately 400m to the north Receptor is not located downwind of the source with respect to prevailing meteorological conditions
R6	Residential - Rigby Fold	Ineffective	Receptor is distanced from the source, approximately 480m to the north-west Receptor is not located downwind of the source with respect to prevailing meteorological conditions

5.1.5 The above information has been used with the land use sensitivity identified within Table 6 to assess odour risk and effect significance as a result of the proposed development. This is summarised in Table 9.

Table 9 Odour Risk Assessment

Receptor	Source Odour Potential	Pathway Effectiveness	Exposure Risk	Sensitivity	Effect Significance
R1	Medium	Moderately effective	Low	High	Slight
R2	Medium	Moderately effective	Low	High	Slight
R3	Medium	Moderately effective	Low	Medium	Negligible
R4	Medium	Moderately effective	Low	Medium	Negligible
R5	Medium	Ineffective	Negligible	Medium	Negligible
R6	Medium	Ineffective	Negligible	High	Negligible

5.1.6 As shown in Table 9, the predicted odour effect significance was **slight** at two receptors and **negligible** at all remaining locations as a result of emissions from the proposed extract flue.

5.1.7 The IAQM guidance states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, potential impacts as a result of emissions from the proposals are considered to be **not significant**, in accordance with the stated methodology.

6.0 CONCLUSION

6.1.1 Redmore Environmental Ltd was commissioned by Philip Dunbavin Acoustics Limited to undertake an Odour Assessment in support of the installation of a new resin oven and associated extract flue at BAE Systems, Samlesbury Aerodrome, Samlesbury.

6.1.2 Odour emissions from the extract flue have the potential to cause impacts at sensitive locations in the vicinity of the site. An Odour Assessment was therefore undertaken to evaluate potential effects as a result of the proposals.

6.1.3 The risk of potential odour effects as a result of 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 two receptors and **negligible** at all remaining locations as a result of emissions from the flue.

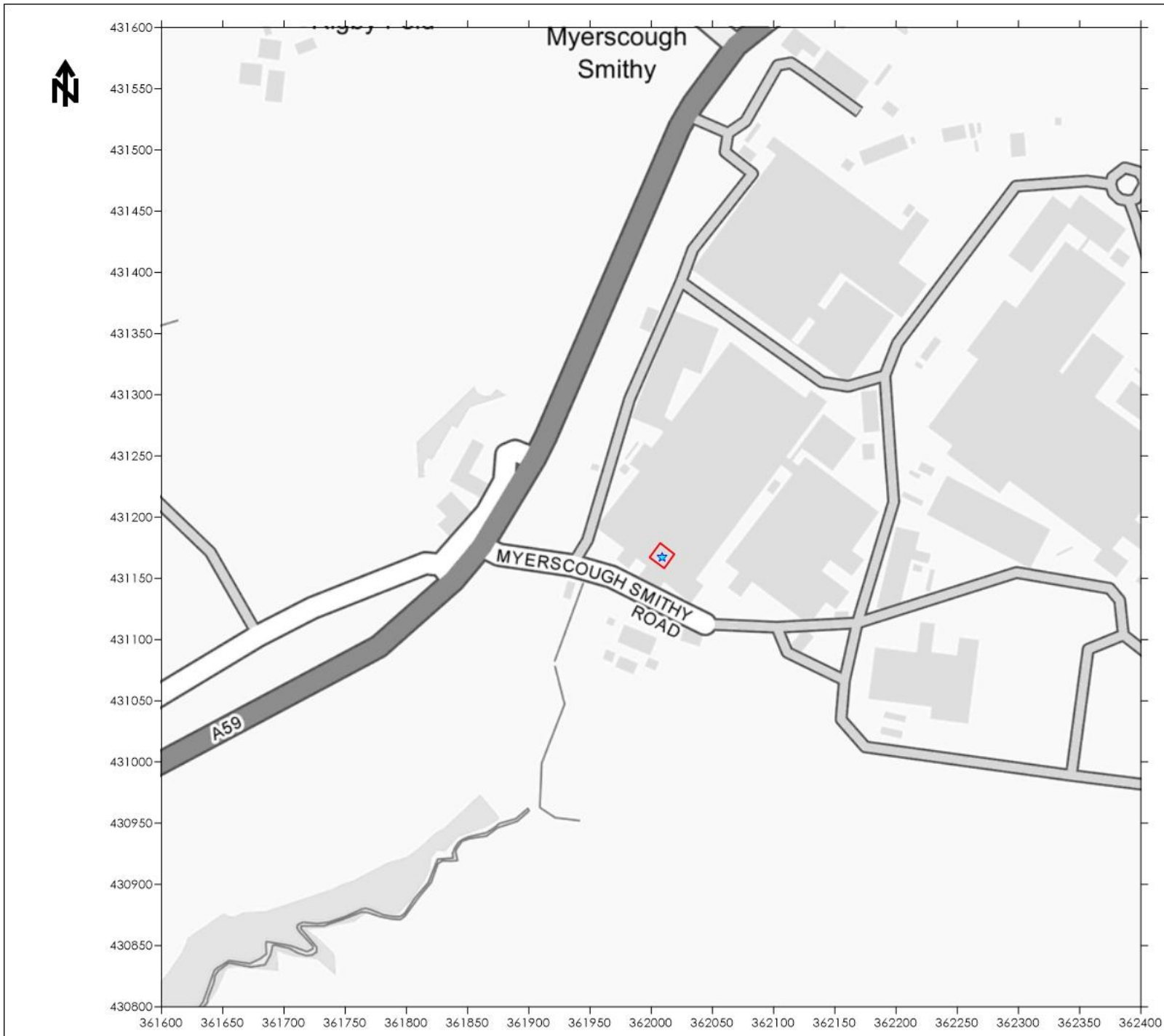
6.1.4 The IAQM guidance¹⁶ states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, based on the assessment results, potential odour effects as a result of emissions from the proposals are considered to be **not significant**. Odour is therefore not considered to represent a constraint to planning consent for the scheme.

¹⁶ Guidance on the Assessment of Odour for Planning, v1.1, IAQM, 2018.

7.0 **ABBREVIATIONS**

EA	Environment Agency
IAQM	Institute of Air Quality Management
LDF	Local Development Framework
LEV	Local Exhaust Ventilation
NGR	National Grid Reference
NPPF	National Planning Policy Framework
ODT	Odour Detection Threshold
RVBC	Ribble Valley Borough Council
STW	Sewage Treatment Works

Figures



Legend

-  Development Location
-  Flue Location

Title

Figure 1 - Site and Flue Location

Project

Odour Assessment
Samlesbury Aerodrome, Samlesbury

Project Reference

10928

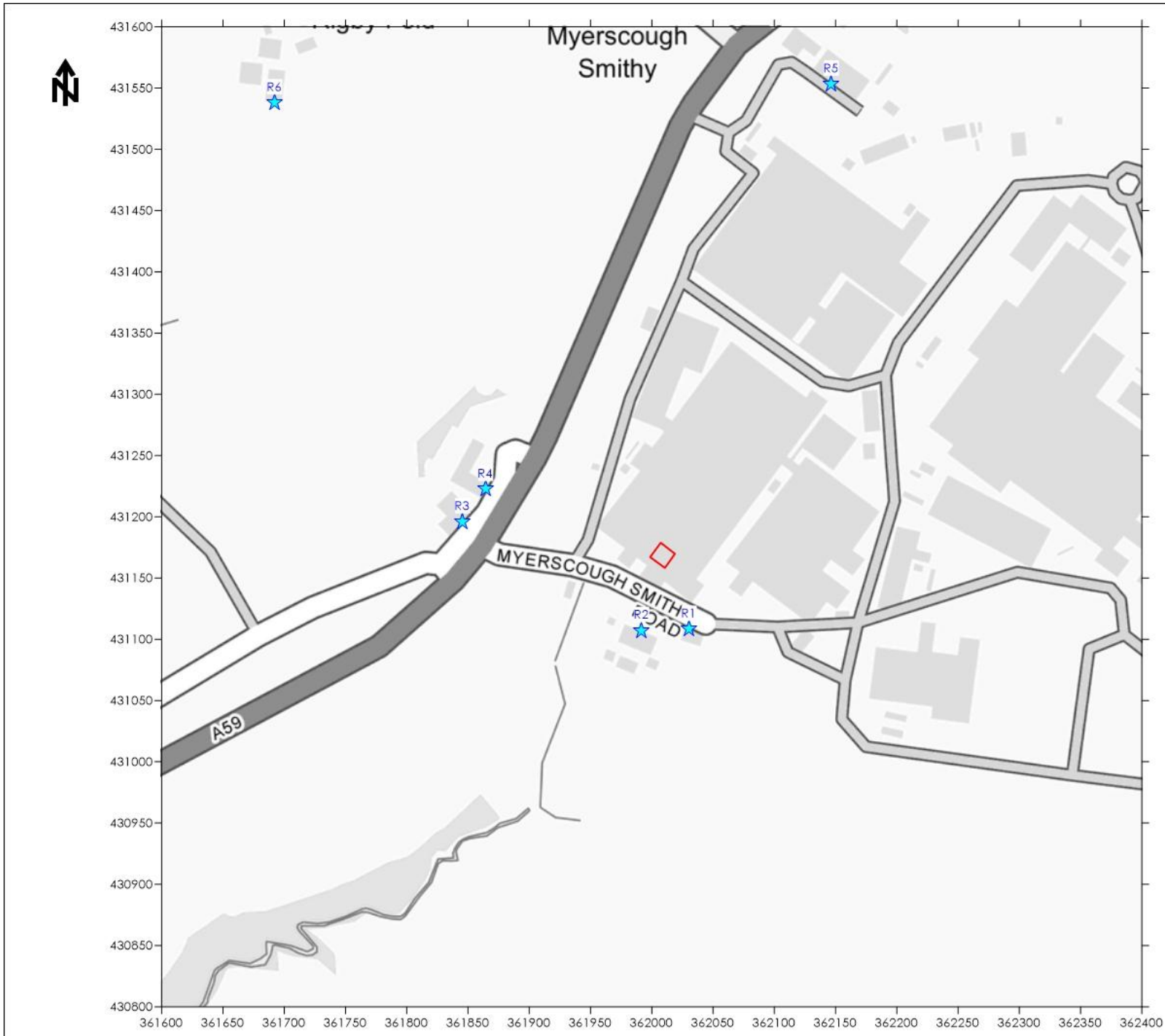
Client

Philip Dunbavin Acoustics Limited

Contains Ordnance Survey Data
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- Legend**
-  Development Location
 -  Sensitive Receptor

Title
Figure 2 - Sensitive Receptor Locations

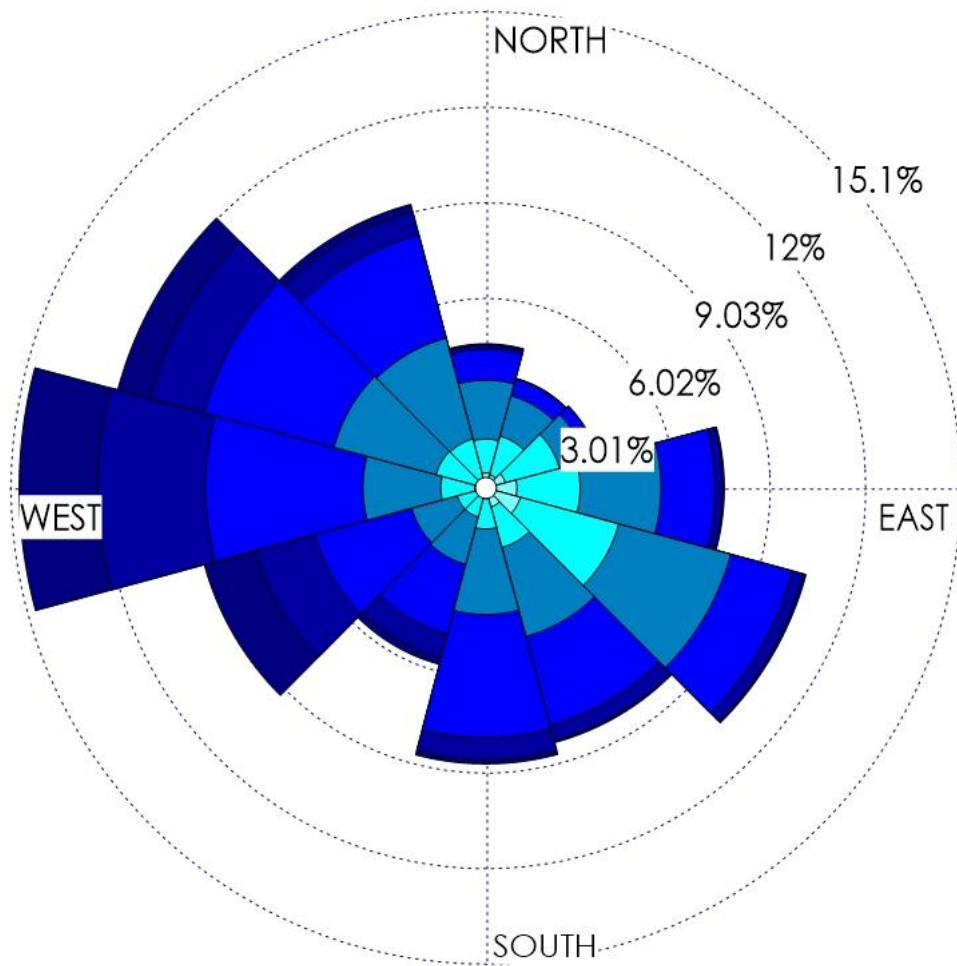
Project
Odour Assessment
Samlesbury Aerodrome, Samlesbury

Project Reference
10928

Client
Philip Dunbavin Acoustics Limited

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Legend

WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.77%

Title

Figure 4 - Wind Rose of 2020 to 2024
Blackpool Airport Meteorological
Data

Project

Odour Assessment
Samlesbury Aerodrome, Samlesbury

Project Reference

10928

Client

Philip Dunbavin Acoustics Limited



Appendix 1 - Curricula Vitae

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.

Biogonix, 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.