

# **ODOUR MANAGEMENT PLAN**

**Traditional Norfolk Poultry Ltd**  
**October 2020**

**Document Reference TNP\_ENV/R003**

**Prepared by:**

**Green Sustain UK Ltd**  
**Cardiff Business Centre, Cardiff House; Cardiff, CF63 2AW**



# TRADITIONAL NORFOLK POULTRY,

## ODOUR MANAGEMENT PLAN

### TABLE OF CONTENTS

Section	Page
<b>SUMMARY</b>	<b>(i)</b>
<b>1.0 BACKGROUND</b>	<b>1</b>
1.1 Location	2
1.2 Details of Installation	2
<b>2.0 ODOUR SENSITIVE RECEPTORS</b>	<b>3</b>
<b>3.0 SITE ODOUR SOURCES</b>	<b>4</b>
3.1 Delivery and Inspection	4
3.2 Bleeding	5
3.3 Scalding	6
3.4 Effluent Storage	6
3.5 Waste Storage	7
3.6 Abnormal Operating Scenario	8
<b>4.0 CONTROL MEASURES</b>	<b>9</b>
4.1 Receipt and Management of Odorous Materials	9
4.2 Transfer of Odorous Substances to Air	9
4.3 Containment of Contaminated Air	9
4.4 End of Pipe Treatment	9
4.5 Transport and Dispersion	9
4.6 Engaging Neighbours	10
4.7 Responding to Complaints	10
4.8 Ceasing or Reducing Operations	11
4.9 Actions - Accident Management Plan	11
<b>5.0 IMPROVEMENT MEASURES IDENTIFIED</b>	<b>12</b>
<b>6.0 PROPOSED CHANGES</b>	<b>13</b>
 <b>APPENDICES</b>	
<b>APPENDIX 1</b>	Site Layout Plan - Odour Sources
<b>APPENDIX 2</b>	Sensitive Receptors Map
<b>APPENDIX 3</b>	Process Flow - Odour Sources and Controls
<b>APPENDIX 4</b>	Sniff Test Record Sheet

# TRADITIONAL NORFOLK POULTRY

## ODOUR MANAGEMENT PLAN

### SUMMARY

---

This Odour Management Plan has been prepared in pursuit of the site's Environmental Permit Application; specifically, the formal request for further information. This plan was created in October 2020.

For the compilation of this management plan, all potential odour sources have been carefully assessed and scrutinised. The appropriate emergency scenarios (equipment break down, periods of sustained hot weather etc) have been assessed also.

Appropriate control measures, and relevant Best Available Techniques ("BAT") have been informed by the relevant BREF document(s), H4 Odour Management – *How to Comply* and Supplementary Odour Guidance for Abattoirs and Poultry Processors June 2010.

Mostly, the nomenclature of the Horizontal Guidance: H4 Odour Management, will be followed for this plan. Some sections will be screened out for assessment at the 'potential source' level, if appropriately justified.

It is the aim of this plan to demonstrate a methodical, step by step assessment process has been undertaken, and the relevant controls in place are clearly assessed as appropriate and sufficient. This plan will continue to be a live document and will be implemented into the site Environmental Management System as a controlled record. This will be reviewed/audited annually, or in the event of any process change implemented on site.

The BREF Commission Implementing Decision (EU) 2019/2031 (November 2019): Establishing best available techniques (BAT) conclusions for the food, drink and milk industries, under Directive 2010/75/EU of the European Parliament and of the Council – states, for BAT 15:

*In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:*

- *A protocol containing actions and timelines.*
- *A protocol for response to identified odour incidents, e.g. complaints.*
- *An odour prevention and reduction programme designed to identify the source(s); to measure/estimate odour exposure; to characterise the contributions of the sources; and to implement prevention and/or reduction measures.*

This BAT states that it is only applicable to cases where *an odour nuisance at sensitive receptors is expected and/or has been substantiated*. It is the aim of this plan to demonstrate this and meet all requirements.

# TRADITIONAL NORFOLK POULTRY

## ODOUR MANAGEMENT PLAN

### 1.0 BACKGROUND

---

A Permit application is being submitted to cover the activities undertaken at this poultry (chicken and turkey) slaughtering and processing site in Shropham, Norfolk. The area of the site is 1.67 Ha. The site has been in operation since 2004.

The company specialises in organic poultry; and this is reflected in the rearing of the livestock, and the raw materials utilised throughout all associated activities.

The site is located on the north east side of the village of Shropham (approx. 7km south West of Attleborough in Norfolk). The entire site is within the ownership boundary of TNP. The buildings are within the site boundary are utilised as a poultry processing plant and associated lairage. To the north of the site, the agricultural field(s) are also owned by the company.

The site has not received any odour complaints since 2015. It is known that potentially odorous activities are undertaken at the site.

---

### 1.1. Site Location

---

The site address is Oak Tree Business Park, Hargham Road, Shropham, Norfolk, NR17 1DS and the site Grid coordinates are 598880, 293100.

Potential sensitive receptors (to odour) have been established and this is illustrated in the plan shown in Appendix 2.

#### Surrounding Land Use

The fields to the rear of the site are owned by TNP.

The housing immediately surrounding the site are either owned or built by TNP. Since the original application submission in April 2020, there have been some new housing developments (. These are shown in the Sensitive Receptors plan).

Identifier	Direction	Feature
1.	North	TNP agricultural land immediately to the North of the site. Further country beyond.
2.	South	Residential properties (owned by TNP), Hargham Rd, countryside.

3.	South	Residential properties (built by TNP), Hargham Rd, countryside.
4.	East	Amazon gym (41m), other small industrial units.
5.	West	New Houses in Harper Close (237m)

---

## 1.2. Details of Installation

---

A Plan detailing potential odour sources, is included in **Appendix A1** – Site Layout: Odour Sources.

## 2.0 ODOUR SENSITIVE RECEPTORS

---

It is recognised there are potentially sensitive human sensitive receptors within the immediate area [of the site location].

Management of TNP understand that the wording of the forthcoming Environmental Permit will apply the conditions of:

- *The odour boundary condition, which specifies the outcome which the operator must achieve (i.e. no pollution beyond the site boundary) and*
- *A condition requiring compliance with an OMP (where activities are considered likely to give rise to odour).*

In this assessment, receptor sensitivity (location) has been considered, in assessing whether the source has been considered likely to give rise to odour. As receptors are not equal; some are more sensitive than others, residential areas have been assessed as the benchmark. Any improvements suggested in this plan, are mindful of any risk of odour detection from these sensitive receptors beyond the Installation boundary.

## 3.0 POTENTIAL ODOUR SOURCES

---

Please refer to Appendix 1 for the corresponding illustrated drawing of the described areas. Please note, only parts of the process that have been deemed to be a potential odour source have been included in this section (and corresponding illustrations).

These sources/processes match the flow diagram produced in Appendix A3.

All potentially odorous activities are undertaken inside the buildings. Appropriate measures will be undertaken with current site controls relating to the receipt, storage and handling of livestock and removal of animal waste materials. Odour management is something that the company treats with utmost importance. The BREF document for the slaughterhouse and Animal By-Products Industry has been referenced, to assess against existing practices against the following risks - *Some fresh animal by-products, such as blood, have a distinctive smell, which can lead to problems or complaints if they are not handled properly. Emissions from by-products can be prevented by storing, handling, processing and transferring materials within a suitable building; bunding tanks; using overground pipe lines and transfer lines; applying overfilling protection on bulk storage tanks and preventing rain ingress and wind entrapment [3, EPA, 1996]. Storing animal by-products over prolonged periods at ambient temperature in the open air increases the risk of direct pollution from odour and leachate. As degradation increases, so does the likelihood of the by-products needing to be disposed of as waste, as their usability significantly decreases.*

---

### 3.1 Delivery and Inspection

---

Odour is associated with the unloading of livestock. Sources can derive from poor housekeeping, poor design of area (unsuitable flooring making cleanliness more challenging) or faeces from livestock if birds are stored for lengthy periods. Typically, larger abattoirs or chicken slaughterhouses may have manure or slurry storage (not relevant to NTP).

- The birds are brought into the site via the lairage area. They are brought from TNP owned farms.
- In relation to odour and hygiene control, the level of faecal contamination produced during transportation, and hence the amount of effluent produced during cleaning, can be reduced by not feeding the birds before shipping to slaughter, due to being owned by TNP. A period of 12 hours between feeding is undertaken to give best results (poultry can store food in their throat which can burst during evisceration). This is undertaken and in compliance with the suggestion in the BREF for Slaughterhouses and Animal By-Products Industries and represents BAT within Supplementary Odour Guidance for Abattoirs and Poultry Processors (“Poultry BAT”)
- The Poultry Meat Hygiene Regulations require the poultry processor to provide separate facilities for cleaning and disinfecting the crates, modules (steel frame) and vehicles in which the birds are delivered.

- Hygiene within this area is of utmost priority. Any small amount of liquid faecal matter is washed away after every delivery. In relation to larger slaughterhouses/abattoirs, the amount of faeces is relatively small and liquid in nature. The minimisation of faeces is discussed above.
- An automated live bird handling systems is used in conjunction with the gas killing function (as opposed to electric stun) – This represents BAT with regard to odour control, as described in “Poultry BAT” document.
- Delivery of other materials that may be of an odorous nature if not handled correctly, are the seasonal supplementary food ingredients. Small amounts of butter, stuffing, herbs and bacon are delivered around the Christmas season. These are taken directly into chilled or frozen storage and utilised within their use-by window.

---

### 3.2 Bleeding (Blood Storage & Handling)

---

Typically, blood storage tanks are the most common source of odour complaints for the poultry processing sector. There are no liquid tanks at TNP but it is recognised that this material storage is definitely a potential source of nuisance odour. There are risks surrounding the management of blood transfer, storage and removal. Indicative BAT describes the requirements of daily cleaning and is addressed below.

- Bleeding is undertaken internally, and this stage of the process is therefore not considered an odour source. Bleeding is undertaken regularly throughout the processing week, and the blood collection troughs emptied. They are cleaned daily in accordance with the set FSA cleaning schedule for implementation of the Meat hygiene standards. These hygiene standards minimise any odour source from this process.
- The blood removal system in place at TNP - the birds hang for 2-4 minutes and are completely exsanguinated. This blood falls into a dedicated trough beneath the bird and is transferred via pipework through the roof void into the awaiting collection sealed, lined trailer skip. The blood becomes viscous upon contact with oxygen and is not liquid at this stage.
- The blood trailer is removed daily, without fail. Blood storage arrangements are described further in Section 3.5. The trailer is covered and lined. Any rainwater runoff would have no access to unmade ground or surface water drains. The material would be viscous should a spill occur.
- The bespoke blood waste trailer is lined. The supplier of the trailer provides assurances to the sealing of the trailer and daily checks are undertaken by both TNP staff and waste management staff.
- The guidance for “BAT Poultry” states that *Blood storage tanks are the most common source of odour complaints for this sector. Some sites have no blood tank and pump directly into a tanker trailer for collection when full. This avoids the issues around offloading but the tanker vent still requires abatement.* Admittedly, there is no abatement located on the blood storage trailer, and the guidance refers to a ‘tanker’. This alludes to large scale blood storage, which is not representative of the processing scale at TNP. A recent calculation of blood capture timed over a 24-period estimated



at peak time, calculates that a maximum of 990Kg of blood would be produced. Regarding this specific named BAT, it is considered a better control measure removing this small amount of viscous blood daily (or more) than storing a tanker for longer periods with a risk of abatement failure etc.

- Also, in accordance with the relevant BAT – there is available blood storage beyond a 24 hour kill cycle. Emergency provisions are also in place.

---

### **3.3 Scalding**

---

Odour problems can potentially arise from scalding, as this is undertaken typically at high heat and odour may be present within the extracted air and/or steam.

- No cooking processes are undertaken at TNP. The only direct emission source from the process is steam from the scalding tank (primary). Consideration is given to the cleanliness of the birds arriving to site (the birds are grown by TNP also) which minimises faecal matter or contaminants. The birds are allowed free range to clean themselves, to ‘dust-bath’ (an important RSPCA marker) and sheds are cleaned daily. This vastly reduces contaminants that potentially could be odorous throughout the processing of the bird (the scalding steam as previously highlighted).
- At TNP the scalding process is set at a comparatively low temperature (when compared to large scale chicken abattoirs), this again reduces steam production typically associated with this odour source.

It is not considered necessary to add odour abatement to this steam discharge, due to the described factors.

---

### **3.4 Effluent Storage**

---

All processing areas across the site are served by a sealed drainage effluent system. This effluent comprises wash down water from activities and may contain small amounts of blood, faeces, and animal by-product. Despite the largely diluted nature of the effluent, this potentially could be an odour source.

- The effluent is contained within storage tank and removed daily (sometimes more than once a day).
- Minimal ABP goes into the effluent system due to the screening processes in place.
- Unloading of tankers takes place to the north of the site (see plan in Appendix 1) this area shares a boundary with TNP farmland. Anecdotally, TNP staff state that the unloading process does not produce an odour.

---

## 3.5 Waste Storage

---

Mismanagement of animal by-products (“ABP”) can result in fugitive emissions of odour. The key elements for ABP odour to exist are time, exposure and temperature. Potential sources within this industry arise from external skip storage, tipping activities, less than daily collections, incoming dirty skips, inadequate wash down of relevant areas and potential cross contamination of waste streams (potential for ABP to be placed within a general waste skip for example, which would be collected more infrequently).

- In accordance with indicative BAT with the relevant BREF guidance document; at TNP, all transfer of ABP materials are undertaken over-ground (by pipework or dolav). The Cat 2 and 3 waste skips (stored separately) are stored externally and are removed daily; as at seasonal times the material would degrade quickly in the open air. The site is aware of the potential leachate risk of the materials stored, and all containers/skips supplied to site are sealed.
- Traditionally, at poultry sites blood is amassed in large storage tanks, which can be an odour risk. There are no blood tanks on site at TNP. The small amounts of blood that are not collected in the process effluent water is discharged from the relevant processing section via pump to the externally stored Cat 3 skip. Blood quickly becomes viscous and jelly like upon contact with oxygen, so the collection skip is covered and sealed. It is collected daily which negates the requirement for prolonged liquid storage (a spill risk as well as odour).
- There are no blood tanks to accidentally fracture/overflow, to become an odour source.
- Most waste ABP waste streams are collected daily by licensed contractors. Waste skips/receptacles are covered and stored on appropriate surfacing. At the time of this application; the risk of spillage/overflow is managed through physical controls (skip is double skinned/sealed), operational controls and strict removal of contents frequently throughout the day.
- General Waste, recycling and some ABP waste is stored in the waste storage area (please refer to plan in Appendix 1). There are several internal waste collection points at the site; to facilitate segregation and compliance with strict ABP Regulations. For example, relevant Cat 2 material is slashed and stained at source, and transferred into locked containment bins. This cover provides appropriate odour control, and is removed daily.
- All external waste storage skips are provided with cover. These skips are checked each collection for integrity. The skips are numbered and there is an agreement with the supplier that each daily skip/waste receptacle shall be supplied clean and in tact (no risk of leachate).

It is recognised that indicative BAT (Supplementary Guidance for Poultry Processors 2010) for waste storage areas is for all waste streams to be stored internally. This is currently not an option for TNP.

Also within the Guidance, is the statement - *A key factor for odour control is prompt removal of animal by-products/wastes before decomposition starts to occur with subsequent generation of malodorous substances.* Of which, TNP complies effectively with.

---

### 3.6 Abnormal/Emergency Operating Scenario

---

The site may experience abnormal operating scenarios, such as unexpected significant increase of business, third party contract failure, or excessive increase or decrease of temperature or rainfall. In relation to odour, the following controls are discussed:

- Periods of Abnormally high Operation – There is processing capacity to effectively contain the waste in an identical manner to periods of lower production. It is stated that TNP has emergency collection capability with their waste management provider.
- Waste Management collection failure – the company has a back up waste management provider. This would increase short term costs but would ensure no storage of ABP waste on site.
- ABP receptacle failure – potential for ABP trailers to fail, discharge to ground. All skips/trailers are numbered and checked daily. The supply terms and conditions of the blood trailer is that it is sealed and watertight.
- Significant increase in ambient temperature – a prolonged period of increased temperature does increase the risk of odours from externally stored ABP materials. This is factored into potential increases in collection of relevant receptacles.
- Significant decrease in ambient temperature – not a risk.
- Periods of excessive rainfall/flooding – historically, this has contributed some difficulty to the movement of large waste manufacturing vehicles, to the rear of the site. Efficient movement of trailers on and off the site is key to controlling potential odorous sources. In Summer 2020, significant surface construction work has been undertaken on the access routes to and from the waste storage area(s).

## **4.0 CONTROL MEASURES**

The following sections have been taken as guidance from the Environment Agency *H4 Odour Management Guidance*. Some sections are not relevant to the processes at TNP but are included here for completeness.

---

### **4.1. Receipt and Management of Odorous Materials**

---

This is largely not relevant to TNP due to the nature of materials processed.

Controls surrounding this stage are described in Section 3.1 Delivery and Inspection.

Small amounts (seasonally) of potentially odorous raw ingredient materials are transferred straight to chilled or frozen closed storage.

---

### **4.2. Transfer of Odorous Chemicals to Air**

---

Not relevant to TNP processes.

---

### **4.3. Containment of Contaminated air**

---

Some steam is generated through the scalding process(es). There are no cooking processes on site to generate odour. Relevant controls are described in Section 3.3.

In relevant processing areas, such as EV, there is no extraction. Door management is an important factor at a food processing site. There are strict controls surrounding air flow, and allowable ingress and egress of air throughout processing areas.

---

### **4.4. End of Pipe Treatment**

---

There are no abatement functions in place at TNP. There are none proposed.

---

### **4.5. Transport and Dispersion**

---

There are no relevant odour sources, that would be better controlled through dispersion functions.

---

#### 4.6. Engaging Neighbours

---

TNP recognises the importance of community relations. The site is located near to some residential properties.

The site has not received any odour complaints since 2015.

TNP owns the surrounding houses and the parent company built the row of houses immediately to the left of the entrance road. Communications are ongoing and friendly between the site and the neighbours. The owner and managers are active members of the community and lines of communication between local residents and the site are well established.

In 2020, there will be new housing located in Harper Close (see plan included in Appendix 2). TNP recognises the relationship with these residents may not be identical to the existing residents. As such, increased monitoring will be undertaken at the relevant boundary place (for new housing). Please refer to Section 1.1 and the monitoring form included in Appendix 4.

---

#### 4.7. Responding to Complaints

---

Odours are recorded and responded to through a process described within a controlled procedure. The complainant is informed of any remedial actions taken because of their reporting.

Prior to the application for an Environmental Permit, the company QMS already had a robust procedure for addressing complaints and non-conformances. Environmental processes have been formally added (November 2019). To be clear, existing odour complaints would have been received and managed prior to this formal environmental management procedure compilation, this arrangement just ensures repeatability in case of future expansions. Details of complaint responding is provided below:

##### **A. Complaints**

The site has an existing communications procedure (QM09P) to ensure that appropriate actions are taken in response to correspondence received relating to environmental issues. Environmental concerns have been added to this procedure – and will be managed by the technical team.

##### *Method – Environmental*

- *Complaints are received as visit/telephone call/letter/Email.*
- *Complaints are recorded and taken to the weekly senior management team meeting.*
- *Complaints shall be communicated to team applicable by senior manager.*

- *If actions are required, they shall be delegated in the SMT meeting, a deadline set and the actions shall be reviewed in the SMT meeting post deadline.*
  - *Written response to any complaint shall be provided as part of the actions delegated.*
  - *Any remedial action taken shall be identified as appropriate, and the relevant changes to this procedure or the Odour Management Plan/Accident Management Plan shall be assessed by the Technical Manager.*
- 

#### **4.8. Ceasing or Reducing Operations**

---

The site does not rely on any mechanical or specialist abatement equipment. It is not considered necessary to reduce operations to implement identified improvements.

---

#### **4.9. Actions – Accident Management Plan**

---

The site has a live Accident Management Plan. Appropriate odour related accidents are included within (emergency scenarios, remediation). Appropriate responses are described. This document is submitted as Appendix 2 to the main supporting document TNP\_SID/042020

In the event of any incident or previously unidentified source; the learnings would be included within the AMP.

## 5.0 IMPROVEMENT MEASURES IDENTIFIED

---

### 5.1 Management of Odours from Site Boundary (sniff testing)

---

It has been identified as a shortcoming to current odour management practices, that no formal olfactory/'sniff' tests are recorded. It is stated that management respond to any unusual odours, as this would indicate potential equipment failure, potential drainage blockages, but they are not dictated formally as a monitoring measure.

In the short term (3 monthly; from November to January) it is proposed a that a daily programme of field measurements, using 'sniff' testing', is undertaken by nominated alternating members of TNP. Alternating as it is recognised that daily external workers may not be as sensitive as other members of the workforce. The reporting form (SI37R-Odour Monitoring Sheet) proposed for use is included in [Appendix 4](#). It is proposed daily over this period, as this period represents significantly increased throughput due to the seasonality of the business. A further assessment of frequency will be decided depending on the results of the daily tests, from February 2021.

The points in which the measurements will be taken, reflect the agreed local sensitive receptors. Tests will be undertaken at the boundary of the site, in the direction of these receptors.

Please note, a wind direction tool has been purchased by the company. This information will be included within the daily checks, along with the information in the H4 Guidance –

- A note of the weather (sunny, raining, windy – if windy, what direction?)
- Designated points of recording (points nearest sensitive receptors i.e. residents)
- Checks on existing odour control (covers on skips)
- Detail any abnormal event (i.e. excessive waste build up, any malfunction etc)
- At every point an intensity shall be recorded:
  - 0: No odour
  - 1: Very faint odour
  - 2: Faint odour
  - 3: Distint
  - 4: Strong
  - 5: Very strong

## **6.0 PROPOSED CHANGES AT NTP (Potentially relevant to current odour controls).**

---

It has been noted that there are potential expansion plans for the Installation. Some plans are relevant to the existing control measures assessed in this document.

There are plans to increase the effluent storage capacity on site. Any expansion to effluent storage will be undertaken with the existing odour controls in mind. It is estimated that the frequency of effluent removal shall continue.

Any changes to site will be strictly assessed against the relevant BAT requirements, and a written record of justification will be retained. The site will continue to work with the Environment Agency in support of operational excellence and compliance with the forthcoming Permit.

At the time of this OMP compilation, it is noted that there may be further new housing developed to the South of the site, across the way on the opposite side of Hargham Road (but not directly opposite). These are just plans currently. Any ongoing site odour assessments shall be mindful of any new local housing.



# **APPENDIX 1**

## ***SITE LAYOUT PLAN: ODOUR SOURCES***

## **APPENDIX 2**

### ***SENSITIVE RECEPTORS MAP***

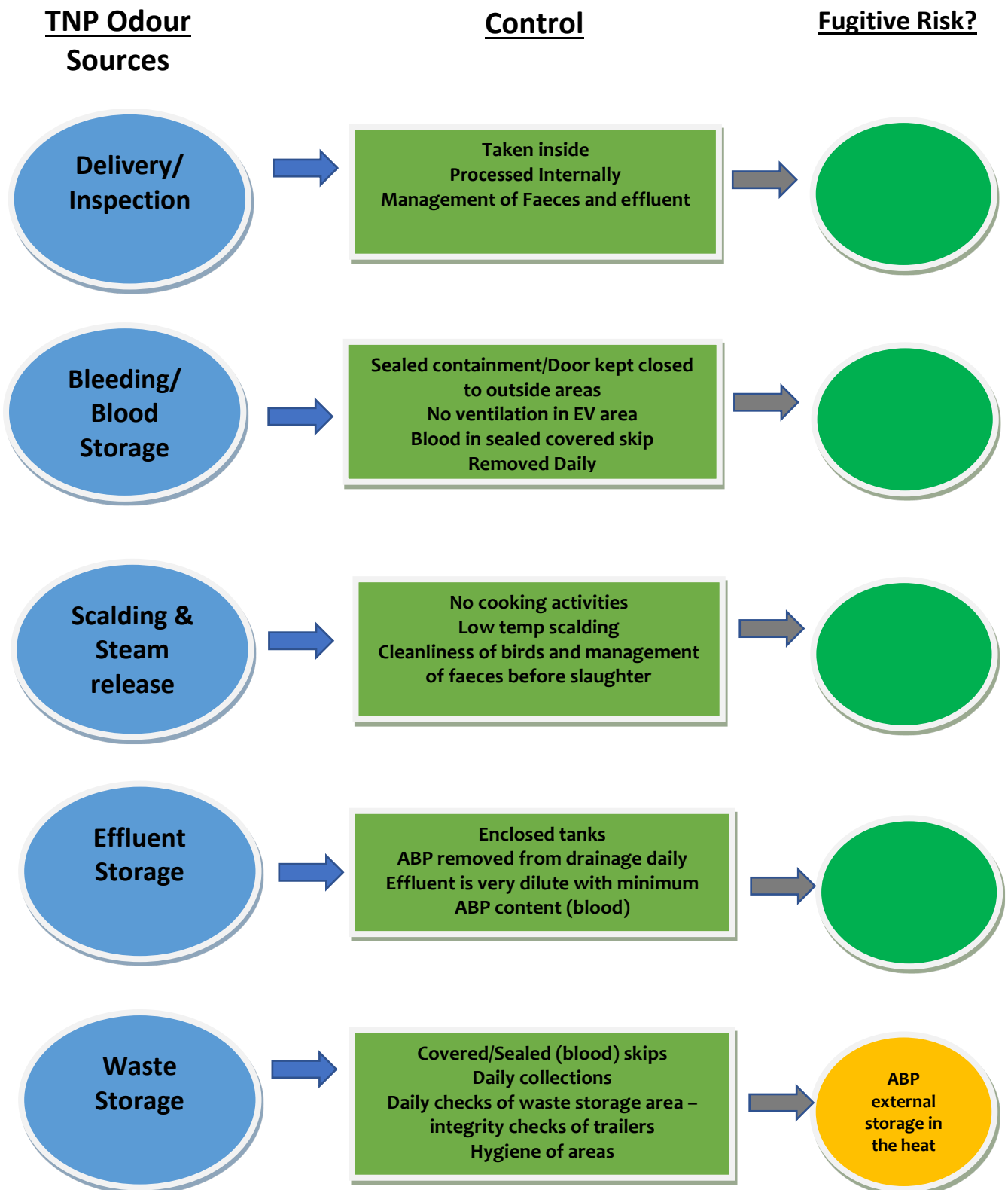
***(TO BE USED IN CONJUNCTION WITH SECTION 1.1 OF THIS DOCUMENT)***

## **APPENDIX 3**

### ***PROCESS FLOW: ODOUR SOURCES AND CONTROL***

# Odour Management Plan

## Process Flow – Odour Sources and Control



In case of extremely hot ambient temperatures

**APPENDIX 4**

***SNIFF TEST RECORD***

