

Odour Management Plan		Reference ISO Document	
		Reference Risk Assessment	N/A
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ACRONYMS/TERMS USED IN THE TEXT

AWT	Air Water Treatment
BAT	Best Available Techniques
DAF	Dissolved Air Filtration
DMDS	Dimethyl-Disulphide
EA	Environment Agency
H ₂ S	Hydrogen Sulphide
Lime	Calcium Hydroxide
NRV	Non-Return Valve
OCU	Odour Control Unit
OMP	Odour Management Plan
Ossein	Pre Treated Animal Bone
PB Gelatins	PB Gelatins UK Limited
PB	PB Gelatins Staff
Sniff Testing	Sensory Field Odour Assessment
SOP	Standard Operating Procedures
WIP	Work in Progress

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1 OBJECTIVES

The objective of the Odour Management Plan (OMP) is to ensure that PB Gelatins UK Limited (PB Gelatins) employs appropriate methods to control and minimise odour pollution.

The OMP has been prepared in accordance with the requirements of Environment Agency (EA) [online guidance 'Control and monitor emissions for your environmental permit'](#)¹ and the Horizontal Technical Guidance Note H4 – Odour Management.²

2 SCOPE

This OMP is relevant to the PB Gelatins site operations at Treforest as defined in Section 4.2 of this OMP.

3 INTRODUCTION AND BACKGROUND

PB Gelatins is a manufacturing facility based in Treforest Industrial Estate, Pontypridd.

PB Gelatins manufacture Gelatin products by extraction from animal bone. Consequently, operations at the site can involve the movement, handling and treatment of potentially odorous materials and there may be the potential for odorous emissions to occur during normal operations and during maintenance or abnormal events.

This OMP has been prepared to ensure that PB Gelatins comply with the requirements of their Environmental Permit EPR/DP3030ZC, namely Permit Condition 3.4 which states *"Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour"*.

4 DESCRIPTION OF SITE & PROCESS

4.1 Site Overview

The site manufactures gelatin for use within photographic and pharmaceutical applications.

The site consists of several buildings as shown on the site layout drawing contained within Appendix 1. The site is located at the northern end of the Treforest Industrial Estate and occupies a total land area of approximately 3.95 hectares.

The Environmental Permit boundary is shown in Appendix 1.

¹ <https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#odour>

² <https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management>

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4.2 Description of Operations

A18 Area - The main bulk raw material input to the facility consists of small fragments of pre-treated animal bone known as Ossein. These are delivered to the A18 area of site where they are subjected to further processing in the 'Old Farm' and 'New Farm' buildings, mainly including the addition of lime and other caustic and acidic solutions, before being transported by truck to the A21 production building.

A18 – Lorries arrive at the site every day to unload small fragments of pre-treated animal bone (ossein). Thereafter, they're transferred into pits at the "New Farm", "Old Farm" or "Millennium Farm" to be further treated using calcium hydroxide (lime) or a mixture of calcium hydroxide, sodium sulphate and sodium hydroxide.

The pits will receive agitation using compressed air for a few minutes every night to ensure that all the bone is treated well. This solution is typically changed three times over thirty days. Upon adequate treatment, the ossein is pumped to a de-limer in the Old Farm to remove excess lime and subsequently transferred into cone washers filled with process water. Here the ossein is then subject to phosphoric acid, sulphuric acid or sodium bicarbonate for pH adjustments which can last anywhere between 8-30 hours. Finally, the treated bone is loaded onto a truck to transport it to A21 for production.

A21 Area – Ossein is subject to physical and chemical processes in the A21 building as the gelatin production is completed. The truck from A18 delivers ossein into a sump which is then pumped to extraction tanks. In the extraction, hot water is passed over the ossein in a series of three extraction tanks. Gel extracted from this step goes through a metal filter and into one of four "weak liquor" storage tanks.

Any residual ossein in the extraction tanks are heated up further. The gel from this is then subject to some chemical additions to promote a clarification of the solution. Subsequently, dissolved air filtration (DAF) will aid the separation of small solids from the liquid gel with the latter being pumped to the weak liquor storage tanks. Cellulose filtration follows this for purification purposes.

The next part of the process is ultrafiltration (for water removal), ion exchangers (for salts removal), and evaporation to concentrate the gel via removal of water. The gel is pumped to "strong liquor" storage tanks for chemical additions before passing through a sterilisation unit. Gelatin noodles are formed after this from an extruder. The noodles are dried on a belt that travels through increasingly hotter zones. Dried gelatin noodles at the end of the drier are broken up and stored in bags.

Blending – Gelatin is sieved, blended, and stored before delivery to customer.

Batches of gelatin are blended depending on customer needs. Often gelatin size separation is required and achieved through use of a mesh screen and/or a mill.

A6 - This building houses administration offices and a quality testing laboratory

A12 and A13 – The buildings are used to warehouse batches of dry, solid Gelatin product and/or Work in Progress (WIP)/intermediate material, as well as to store packaging.

Waterworks - River abstraction water is used in the production process and the preparation of this process water is undertaken in the Waterworks area, including the addition of water treatment chemicals, before this 'clean' water is piped to the various areas of site for use in the process.

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Effluent System – Effluent treatment is undertaken via two effluent treatment plants, one processing the effluent from the ‘Old Farm’ and ‘New Farm’ areas with a further separate effluent treatment system in place to manage the effluent from the A21 area of the Installation.

Old and New Farm Effluent Treatment

Effluent from these areas is channelled, via below ground drainage pipes, to the Effluent Pumping Station which consists of a large concrete sump. The collected effluent is pumped to a balance tank situated in the A18 area of the Installation. Larger particulates are filtered out of the effluent liquid in the balance tank, which then discharges to a Dissolved Air Filtration (DAF) plant for further treatment. Following treatment, organic rich sediment is pumped to a sludge tank which is emptied several times weekly by a tanker which removes the contents for land spreading. The liquid phase is released to foul sewer via discharge point DP1.

A21 Effluent Treatment

Effluent from the A21 area is treated at an effluent treatment system based at the rear of the A21 building. The effluent from A21 processing is directed and captured within a new below ground stainless steel tank. The effluent is then pumped by two stainless steel pumps from the collection tank to the screening system (two 0.5mm screening system). The pH as well as flow will be monitored prior to screening. The solids following screening will be collected within a roll on roll off enclosed skip and the remaining liquid phase will be pumped to the new bunded settling tank for balancing (natural pH correction). There will be duty and standby centrifugal pumps. The effluent is held in the new bunded balancing tank, which has an effluent storage retention time of approximately 8 hours, before being pumped using above ground centrifugal pumps through an in-line static mixer for pH correction. The effluent balance tank benefits from an acid wet scrubber to remove any potential odours.

Sodium hydroxide and hydrogen chloride are used for acid and alkaline dosing. Once the effluent within the static mixer is of the correct pH for discharge to foul sewer (pH 5-11) in accordance with Trade Effluent Consent limits, the effluent will be discharged via discharge point DP2.

5 ODOUR SENSITIVE RECEPTORS

The site is located within an extensive area of generally light industrial and commercial developments. The nearest residential property is located approximately 80m from the site boundary.

Appendix 1 shows the location of the receptors in relation to PB Gelatins site.

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Table 1: Odour Receptors

Receptor	Property Type	Property name	Address	Distance from Odour Source on Site
R1	Residential	Bridge House	Williams Close, Upper Boat CF37 5BH	Approx. 80m
R2	Residential	Pound Farm	Pound Farm Lane, Tonteg CF38 1SU	Approx. 552m
R3	Commercial	Keyline Builders Merchants	Taffs Mead Road, Pontypridd CF37 5TF	Approx. 20 m
R4	Commercial	The Welsh Shop	Taffs Mead Road, Pontypridd, CF37 5TF	Approx. 35 m
R5	Commercial	Greggs Shop	Taffs Fall Road, Pontypridd, CF37 5TF	Approx. 45 m
R7	Commercial	Griffin Mill	Tonteg Road, Pontypridd, CF37 5TF	Approx. 10 m
R8	Commercial	Petwise	Severn Road, Pontypridd, CF37 5TF	Approx. 100 m
R9	Commercial	Café	Severn Road, Pontypridd, CF37 5TF	Approx. 100 m

6 INVENTORY OF KNOWN ODOUR SOURCES

6.1 Potential Odour Sources from PB Gelatins

Table 2: Potential Odour Sources to originate from PB Gelatins Operations

Source	Activity	Odorous Compounds	Odour Impact Assessment
A18 Effluent Treatment System			
Rotary Screen	Filters large ossein particulates from effluent	Hydrogen sulphide (H ₂ S), Mercaptans	<ul style="list-style-type: none"> Continual release at high level Medium level odour when control measures not implemented. Low odour level when all control measures are implemented
Balance Tank	Collection of sludge from DAF process	H ₂ S, Mercaptans Dimethyl disulphide ("DMDS")	<ul style="list-style-type: none"> Low level release High level odour at source when control measures not implemented. Low level when all control measures are implemented
Bone Skip	Bone waste collection and storage	H ₂ S, Mercaptans	<ul style="list-style-type: none"> Continual release at ground level Low level odour
Sludge Tank	Collection of sludge from DAF process	H ₂ S, Mercaptans	<ul style="list-style-type: none"> Continual release, at ground level Medium level odour when control measures not implemented. Low level when all control measures are implemented

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Table 2: Potential Odour Sources to originate from PB Gelatins Operations (Cont.)

Source	Activity	Odorous Compounds	Odour Impact Assessment
A18 Effluent Treatment System (Cont.)			
Sludge tank (Cont.)	Collection of sludge by tanker	H ₂ S, Mercaptans DMDS	<ul style="list-style-type: none"> Continual release at ground level High level odour at source when control measures not implemented. Low level when all control measures are implemented
Old Farm Building	Internal effluent drains	Mainly ammonia, but can also have H ₂ S, mercaptans	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented
Peacemaker	Dry scrubber to remove odours from DAF sludge tank & vacuum tanker	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented
Carbon Filter	Introduces air into the DAF sludge tank and remove odours in the event of a failure of the peace maker unit	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented
Wet Scrubber	Oxidises odours from dry scrubber units	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented
Effluent pumping station scrubber	Dry scrubber to remove odours from the pumping station	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented
Balance tank acidic wet scrubber	Acidic wet scrubber to remove ammonia and ammonia-based substances	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> Medium level release when control measures not implemented. Low level when all control measures are implemented

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Table 2: Potential Odour Sources to originate from PB Gelatins Operations (Cont.)

Source	Activity	Odorous Compounds	Odour Impact Assessment
A21 Effluent Treatment System			
Balance tank acidic wet scrubber	Acidic wet scrubber to remove ammonia and ammonia-based substances	H ₂ S Mercaptans Amines Ammonia DMDS	<ul style="list-style-type: none"> • Medium level release when control measures not implemented. • Low level when all control measures are implemented
Screener	The effluent from A21 processing is directed and captured within subsurface tank and then pumped from the collection tank to the screening system	H ₂ S, Mercaptans	<ul style="list-style-type: none"> • Medium level release when control measures not implemented. • Low level when all control measures are implemented
Screened material within skip	Storage of screened material	H ₂ S, Mercaptans	<ul style="list-style-type: none"> • Continual release at ground level • Medium level odour at source when control measures not implemented. • Low level when all control measures are implemented
General Processes			
Old Farm Building	General process operation	Mainly ammonia, but can also have H ₂ S, mercaptans	<ul style="list-style-type: none"> • Medium level release when control measures not implemented. • Low level when all control measures are implemented
New Farm Building	General process operation	Mainly ammonia, but can also have H ₂ S, mercaptans	<ul style="list-style-type: none"> • Medium level release when control measures not implemented. • Low level when all control measures are implemented

6.2 Potential Nearby Third-Party Odour Sources

There are several off-site potential odour sources in the vicinity of PB Gelatins. These are provided in Table 3.

It is important to consider these sources if an odour complaint is received by PB Gelatins to substantiate the complaint.

Table 3: Potential Odour Sources in the Immediate Vicinity of PB Gelatins

ID	Property name	Address	Process
S1	Greggs Shop	Taffs Fall Rd, Pontypridd, CF37 5TF	Bakery
S2	Egan Waste	Unit 15A Treforest Ind Est, Pontypridd, CF37 5TA	Waste Recycling
S3	Apparel Master	Unit A14 Treforest Ind Est, Pontypridd, CF37 5SY	Industrial laundry

Appendix 2 shows the location of the offsite potential odour sources in relation to PB Gelatins site.

7 ODOUR CONTROL DURING NORMAL OPERATION

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The application of good working practices and process control is of fundamental importance in eliminating and minimising the quantities of odours formed on site and their subsequent release to atmosphere. The overall aim in the operation of the processing facility is to apply Best Available Techniques (BAT) at all stages of the production processes.

The installation will therefore managed in accordance with the accepted hierarchy of preferred controls:

1. prevent the formation or emission of odorous compounds;
2. where this is not practicable, minimise the release of odour;
3. abate excessive emissions;
4. dilute any residual odour by effective dispersion in the atmosphere.

7.1 A18 Effluent System

Hydrogen peroxide will be dosed into the effluent drainage system to control the overall bacteriological burden within the effluent stream. Effluent levels within the pumping station sump are maintained at less than 3m through operational management of process plant. The sump is subject to a cleaning regime to prevent build-up of potentially odorous residues.

7.2 Rotary Drum Screen

The drum screen will be subject to periodic inspection and cleaning regime (Monday-Friday) to ensure effective operation of the drum scraper and prevent the build-up of odorous residues.

7.3 Balance Tank

The balance tank is fully drained, and build-up of content is removed for external disposal. The tank and equipment are then inspected. This is on a 3-monthly frequency. This task is undertaken by competent contractors who specialise in this type of work. The task is undertaken on a Sunday at 05.00 am so that the least amount of people is within the area. There is one manway that is opened, the whole time this operation is being undertaken the acid scrubber system is still operational.

7.4 Bone Storage and Removal

Skips are removed from site on a three times weekly basis to avoid the build-up of odours. Once the extraction residue and A21 effluent systems are installed, the frequency will be reviewed with the possibility to reduce removal frequency whilst ensuring odour nuisance is not caused as a result. This will be monitored by routine sniff testing. The area where the skip is placed is protected by a drainage system so that any leachate water from the skip can be contained. The impermeable floor surface is washed down routinely into enclosed drains which prevent further odour from being generated.

7.5 DAF Plant

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A number of control techniques have been included within the design of the production process, DAF plant and collection systems in order to ensure the most effective implementation of BAT for this type of process. The measures to be employed include:

- the housing of the complete process (reception, treatment, and storage) in an enclosed building, pipework, or tank collection system.
- within each section is managed effectively regarding the emission load in that area;
- process conditions include the addition of Sodium Hypochlorite to control bacterial build up.
- process odours are continually monitored, and process adjustments made to prevent odorous build up.

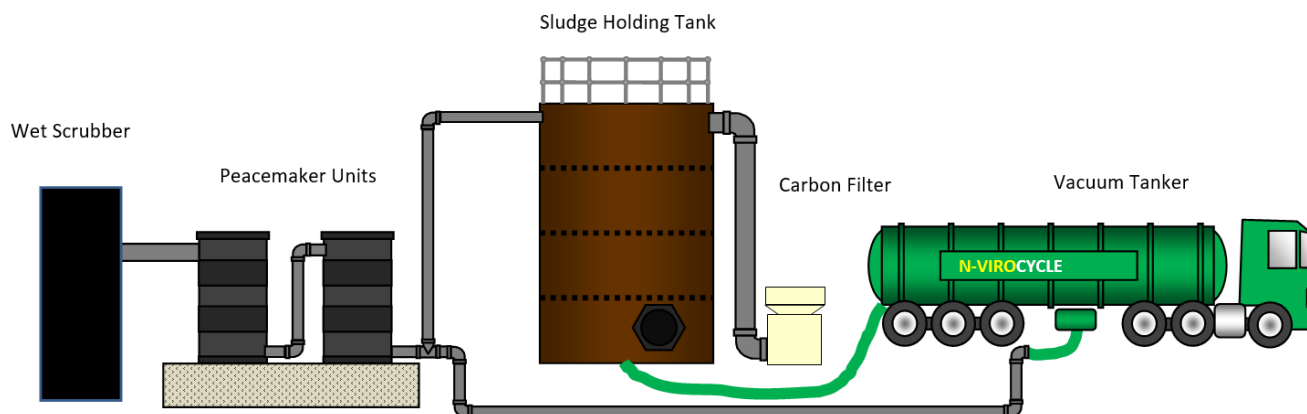
7.6 DAF Sludge Tank

The sludge holding tank is a fully contained tank which has been specifically designed to ensure leakage is very unlikely. Sludge is transferred from the DAF plant to the sludge tank in an enclosed pipe work system that ensures no odour can be released to the atmosphere. During routine operation, the extraction fan on the peacemaker unit draws the air containing emission gasses from the DAF sludge tank through the odour control system reducing any potential odours; fresh air is allowed through the passive carbon filter into the sludge tank to eliminate the vacuum.

Systems of monitoring are in place to ensure pumps, pipe work, connections, and valves are all in good working order.

7.7 DAF Sludge Transfer

During the tanker filling operation, the tanker connects to the sludge tank via a secured hose and the exhaust from the tanker connects the Peacemaker odour control units. Once the vacuum is achieved in the tanker, sludge is drawn from the sludge tank into the tanker. As the level reduces in the sludge tank, air is drawn in through the passive carbon filter to eliminate the vacuum within the sludge tank. Air within the tanker is expelled into the Peacemaker odour control system reducing the odours.



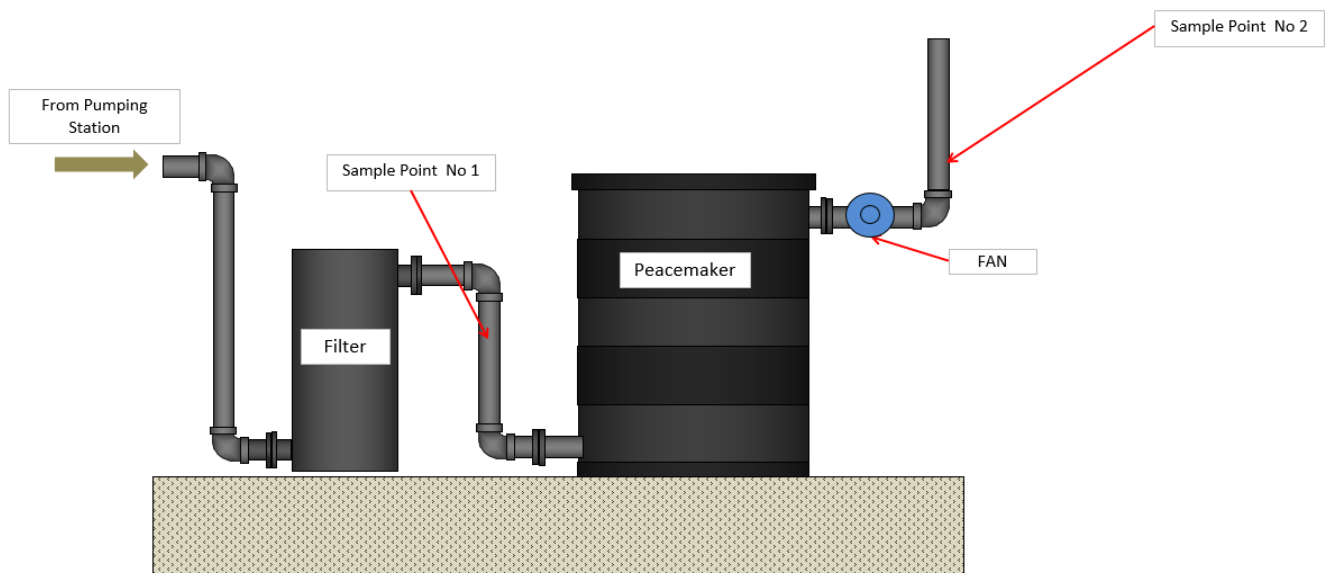
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The DAF sludge odour control system consist of five main components, these are:

1. **Passive Carbon Filter:** This is used as a non-return valve (NRV) to allow air into the sludge vessel preventing a vacuum being produced which could potentially crush the storage vessel.
2. **Peacemaker Units:** The Peacemaker is a dry scrubbing system constructed of black polypropylene vessels which contain Triox media and extruded coal based activated carbon which are designed to remove the H₂S, Mercaptans and Amine gases.
3. **Duct Systems:** The PVC pipe work ducting, is used to connect the various items of the odour control system.
4. **Extraction fan:** The system includes a centrifugal extraction fan which is fitted to the last peacemaker unit, which ensures that the system is under a vacuum.
5. **Wet scrubber:** Exhaust air from the Peacemaker passes through a wet scrubber containing a water and DIOX solution.

7.8 Effluent Pumping Station

The effluent pumping station benefits from a peacemaker dry scrubber on Triox media to remove H₂S. A sketch of the system is provided below. This peacemaker is unaffected by high levels of moisture with the potentially odorous gasses off wastewater processes.



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7.9 A21 Effluent Treatment

The design includes enclosed vessels where possible to minimise potential diffuse odour emissions. Wastewater is kept continuously moving using two airjet pumps to prevent stagnation by aerating the water.

The airjet pump is a jet aerator which automatically aspirates the air into the ejector and subsequently mixing it with the wastewater during combined mixing and aeration.

The effluent balance tank benefits from an acid wet scrubber to remove any potential odours.

The screened material is collected in a skip which is stored in a dedicated building. The residence time of screened material is kept to a minimum ensuring the holding time does not result in odour generation. The skip containing the effluent solids following screening will be replaced with a new clean skip every week.

The effluent treatment design was selected to limit the requirement for cleaning. The pumping chamber has a sloping base so that it is self-cleaning to reduce the requirement for complete emptying and cleaning. The static screens also have self-cleaning systems. Annual cleaning of the plant and equipment is undertaken with regular inspections also undertaken by PB Gelatins employees to identify any build-up of material which will require additional cleaning. Cold water hoses are installed near the screening area for use when required. The balance tank will benefit from Landia pumps which are designed to keep the solids in suspension so reducing the requirement to clean the balance tank thereby reducing odour.

7.10 Regular Inspections on Odour Control Units

Air samples are taken monthly by PB Gelatins staff (PB), to monitor the levels of odorous gasses, to assess the effectiveness of the odour control systems.

On a bi-annual basis, a health check of the odour control systems, is carried out by Air Water Treatment (AWT), where air samples, air flow rate and pressure readings are taken to assess the effectiveness of the systems.

The inspection programme is detailed in Table 4.

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Table 4: Odour Control Unit Regular Inspection Programme

Sample Point	Monthly Inspections (PB)	Annual Inspections (AWT)
Effluent Pumping Station Odour Control Unit (OCU)	H ₂ S Mercaptans Amines	H ₂ S Mercaptans Amines Ammonia DMDS Air Flow m ³ /hr Pressure Kpa
DAF Sludge OCU	H ₂ S Mercaptans Amines	H ₂ S Mercaptans Amines Ammonia DMDS Air Flow m ³ /hr Pressure Kpa
A18 Balance Tank OCU	H ₂ S Mercaptans Amines	H ₂ S Mercaptans Amines Ammonia DMDS Air Flow m ³ /hr Pressure Kpa
A21 Balance Tank OCU	H ₂ S Mercaptans Amines	H ₂ S Mercaptans Amines Ammonia DMDS Air Flow m ³ /hr Pressure Kpa

7.11 Old and New Farm Buildings

To achieve overall odour containment and thus to minimise unplanned releases of odour to atmosphere, it is essential that the integrity of the fabric of main process buildings is maintained continuously, other than during periods of essential maintenance.

Roller shutter doors and pedestrian doors will always be shut when not in use. Pedestrian doors will be fitted with door closers. The effective operation of roller and other doors will be checked routinely.

The building was previously fitted with vents. These are not used and are sealed to prevent the release of odour. The buildings will benefit from the use of two biofilters, one to service the A18 'New and Millenium Farm' Building and a second unit for the A18 'Old Farm' building. The purpose of these activated carbon biofilters is to remove odours (ammonia, hydrogen sulphide and volatile organic compounds) from the storage and processing of the raw material, such as the liming pits.

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The operation of the biofilters will be in accordance with the manufacturer manual and instructions. It is anticipated that the following will be monitored and controlled within reasonable limits to maintain biofilter performance; moisture content, drainage, pH, temperature, nutrient availability and the pressure drop across the biofilter media.

A contract will be in place with a specialist biofilter maintenance company who will attend site regularly to ensure the biofilters are achieving optimum odour control performance. The activated carbon will be replaced in accordance with the manufacturer recommendations and inspections and maintenance will be included in the Planned Preventative Maintenance Regime (“PPMR”).

8 MAINTENANCE OF ODOUR CONTROLS

This section of the OMP describes how PB Gelatins will address the following issues to maintain the effectiveness of odour controls:

- Plant performance
- Reagents and consumables
- Planned inspection and maintenance.

8.1 Maintenance Plans, Operating Procedures and Checklists

Planned maintenance and inspection is crucial to maintaining the effectiveness of odour control measures. PB Gelatins will ensure the good performance of all plant, treatment processes and odour control equipment through an effective, planned inspection and preventative maintenance regime which will include a written maintenance programme and records of maintenance.

A registry of standard operating procedures (SOPs) for the following odour critical plant and processes addresses the following:

- Sludge tank, pumps, and pipework
- Balance tank, pumps, and pipework
- DAF Plant
- Peacemaker Units.
- Effluent pumping station
- A18 internal effluent drains
- A21 effluent treatment including balance tank, pumps, and pipework;
- A21 internal effluent drains.

8.2 Spare Components and Consumables

Adequate supplies of spares, reagents and consumables will be kept on site. Records will be kept of the delivery and usage of all such items, and these records will be used to minimise the risk of stock shortages.

Schedules will be prepared for the planned replacement of longer lasting reagents such as filter media, together with any monitoring which has a bearing on the suitability of these plans.

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9 ODOUR CONTROL DURING MAINTENANCE AND ABNORMAL EVENTS

This section of the OMP deals with the management and control of odours during maintenance and abnormal operating situations. It sets out the ways in which PBG will operate an action plan for abnormal event scenarios (including emergencies, maintenance, breakdowns, weather anomalies, etc).

A tabular risk assessment approach (overleaf) has been employed in the evaluation of odour control techniques during maintenance and abnormal events. The table will:

- identify the location and conditions under which abnormal operational conditions or failures might arise.
- summarise the potential impact or consequences of the identified abnormal / failure situation and assesses the degree of those impacts.
- describe how the conditions could be prevented and/or mitigated and controlled. Most abnormal situations can be controlled by effective management.

Where planned or emergency maintenance of plant items must be carried out and there is a likelihood of odour being released to atmosphere in quantities enough to result in detection offsite, local receptors will be informed.

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Table 5: Odour Control during Maintenance and Abnormal Events

Location of Emission	Circumstances	Measures to prevent or reduce the possibility of an abnormal event	Actions to be taken, and individuals responsible	External checks to be implemented
Sludge Tanker	Damage to hose during tanker operation	Driver inspects hose before use	Operative to stop transfer of sludge. Supervisor to arrange for spilt materials to be collected by contract tanker	Inform neighbours of potential odours Undertake extra external inspections on odour by PB Gelatins staff
Sludge Tanker (Cont.)	Sludge tanker driver forgets to connect tanker exhaust to the Peacemaker	Procedure communicated to all drivers. Supervision from PB Gelatins operative	Operative to stop transfer of sludge, investigate and connect to Peacemaker before process commences.	Undertake extra external inspections on odour by PB Gelatins staff
Peacemaker	Peacemaker failure / blockage	Regular maintenance and inspection to determine status of Peacemaker	Operative to stop transfer of sludge Engineering to investigate and repair Peacemaker	Undertake extra external inspections on odour by PB Gelatins staff
	Peacemaker odour reduction efficiency reduced	Regular maintenance and inspection to determine status of Peacemaker.	Operative to stop transfer of sludge, Engineering to investigate and repair Peacemaker.	Undertake extra external inspections on odour by PB Gelatins staff
Access doors on the A18 buildings	Doors accidentally or deliberately left open	A closed-door policy to ensure building containment is not compromised. Self-closing mechanism and signage to be fitted to all personnel access doors.	After entering or exiting the building, it will be the responsibility of all employees to ensure doors are closed behind themselves	Undertake extra external inspections of odour by PB Gelatins staff
Access doors on the A18 buildings	Doors broken or requiring replacing	Doors inspected regularly by maintenance. Reports raised	Door up-keep will be classes as a priority to avoid odour issues. Doors open or removed for the shortest period	Undertake extra external inspections of odour by PB Gelatins staff

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Table 5: Odour Control during Maintenance and Abnormal Events (Cont.)

Location of Emission	Circumstances	Measures to prevent or reduce the possibility of an abnormal event	Actions to be taken, and individuals responsible	External checks to be implemented
Effluent Balance Tanks	Failure of pumping systems	Regular maintenance and inspection	Engineer to stop effluent process and repair equipment	Inform neighbours of potential odours Undertake extra external inspections of odour by PB Gelatins staff
	Failure of drum screen scraper /A21 effluent treatment screener	Regular maintenance and inspection	Engineer to stop effluent process and repair equipment	Inform neighbours of potential odours Undertake extra external inspections of odour by PB Gelatins staff
	Failure of wet scrubbers	Regular maintenance and inspection	Engineer to stop/limit effluent process and repair equipment or specialist maintenance contractor attend site to identify and address issue	Inform neighbours of potential odours Undertake extra external inspections of odour by PB Gelatins staff
A18 buildings	Failure of biofilters	Regular maintenance and inspection	Engineer to repair equipment or specialist maintenance contractor attend site to identify and address issue.	Inform neighbours of potential odours Undertake extra external inspections of odour by PB Gelatins staff
Site	Failure of chemical delivery/stock	Regular review of inventory, records of orders and delivery. Stock planning in place. Multiple companies on system for stock. Similar stock utilised on other PB Gelatins can share chemicals.	Review process. Potentially plant shutdown depending on the situation	Depending condition on level of issue Undertake extra external inspections of odour by PB Gelatins staff
Site	Site manning levels	Daily review of manning levels. Forward planning.	Review process. Potentially plant shutdown depending on the situation	Depending condition on level of issue Undertake extra external inspections of odour by PB Gelatins staff
Site	Elevated external temperatures (heatwave) for prolonged period	N/A	Review process. Potentially adjusting process scheduling. Investigation of additional odour control units.	Undertake extra external inspections of odour by PB Gelatins staff (at least three times per day).
Site	Flooding event	Follow NRW flood warnings and position flood defences.	Review process. Potentially plant shutdown depending on the situation.	Undertake extra external inspections of odour by PB Gelatins staff.

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10 MONITORING, RECORDING AND REPORTING

This section of the OMP sets out the monitoring procedures that will be implemented to assess the effectiveness of operational controls to prevent and contain odours, and to assess the nature and extent of an odour problem should it arise. The procedures are based on the measures set out within Section 5 ‘Monitoring’ within the EA’s H4 guidance.

10.1 Overview of Monitoring Plan

PB Gelatins will monitor odour emissions from the facility to ensure releases do not result in nuisance at sensitive receptors. Monitoring includes both emissions monitoring of odour and inspections of the process, buildings, and equipment to check that emissions are being contained and meet the accepted standards of good practice in relevant guidance.

To evaluate the performance of control techniques in use at the plant, odour monitoring will take place using the following methods:

- programme of field measurements, using ‘sniff testing’, to a procedure based on that outlined within the H4 guidance.
- daily monitoring of weather forecasts and retention of on-site meteorological data downloaded from weather station located at the A18 building.
- monitoring of complaints and other forms of community feedback.
- continuous monitoring of odour abatement equipment by appropriate parameters (e.g. measurement of pressure drops) to give an indication of performance.
- general monitoring of site drains and sumps related to general processes.

10.2 Sniff Testing

Monitoring of odour exposure by sensory field odour assessment (“sniff testing”) will be undertaken by employees to determine extent and nature of potential odours. Sniff testing will be employed for the following reasons:

- as part of a daily walkover survey at the PBG site boundary during normal operations, to confirm the effective performance of odour control measures in place. If necessary, the daily sniff test will be validated by a member of staff who is not normally exposed to everyday plant operations.
- during breakdowns, planned maintenance or an abnormal event to evaluate the effectiveness of the control measures in place and the likelihood that odour complaints will be received.
- If a complaint is received, at the locations of sensitive receptors.
- as detailed in table 5 of this OMP.

The sniff test assessments will be conducted as identified in the PB Gelatins procedure SHE 004 which is based on the protocols within the H4 Odour guidance. A summary of the extent and scope of the daily odour survey is presented in Table 6 of this OMP.

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Table 6: Summary of Field Odour Monitoring at the Site Boundary

Parameter	Value
Frequency of measurement	Daily (during normal operations) Reactive (in response to abnormal events or complaints)
Determinands	Odour intensity (detectability) Receptor sensitivity
Sampling Location & Durations	Walkover survey of the site boundary (during normal operations) and at the originating address in the event of a complaint investigation
Sampling method	Sniff test
Limit Value	All odour detection to be reported to supervisors immediately.

If abnormal odour is detected, the source of the odour would be investigated, and remedial action taken, as necessary. The blank Sniff Testing Odour Reporting Form is provided in Appendix 3.

10.3 Monitoring of On-site Meteorological Data

The monitoring of real-time meteorological data is an effective tool in the management of odorous emissions from the facility. Certain meteorological conditions may lead to an increased risk of odour annoyance at sensitive receptors. The use of meteorological data will be used to help predict if additional monitoring is to be scheduled and if planned maintenance operations need to be re-scheduled if necessary.

10.4 Complaints Monitoring

Complaint data is recognised by NRW as the most important tool for assessing the overall level of odour impacts experienced by members of the public at locations outside the site boundary. It is therefore vital to record and act upon complaints received and communicate the outcome of investigations to complainants. Complaints are collected, registered, and validated as described in EMS 09 Complaints Handling Procedure. The specific Odour Complaint Form to be used is provided in Appendix 4 of this OMP.

10.5 Odour Diaries and Community Surveys

PB Gelatins recognises that there is the potential for circumstances to arise where odour complaints from community members contradict the results of the daily sniff testing monitoring programme, due to the 'adaptation' of site-based staff to odours released from PB Gelatins operations. Where it is found that this occurs over an extended period, consideration would be given to engaging members of the public to undertake a period of community monitoring to evaluate and optimise the performance of the routine sniff testing programme.

The community monitoring programme would take the form of participation in off-site walkover surveys and the keeping of odour diaries, using the standard form in Appendix 5 of this OMP.

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10.6 Monitoring of Control Effectiveness

Where plant operating parameters are considered essential for the effective operation of odour critical plant or abatement measures, monitored will be carried out and records maintained for analysis of the condition of the control measures and abatement systems implemented.

All complaints, sniff testing and internal odour reports will also be documented.

11 ORGANISATION AND RESPONSIBILITIES

This section of the OMP provides information on:

- staffing responsibilities
- staff training

11.1 Roles and Responsibilities

The company has appointed managers with the responsibility for implementing the OMP. Work instructions and procedures exist for odour critical plant and processes and have been issued or made available to personnel responsible for undertaking these tasks.

Further information on the role of staff members and responsibility for odour management is given below:

- PB Gelatins installation is the responsibility of the Plant Director.
- routine preventative maintenance and reactive breakdown maintenance is the responsibility of the Maintenance Manager.
- each individual facility supervisor, who reports to the Operations Manager, is responsible for the site operatives.
- operational staff members at PB Gelatins are responsible for operating, maintaining, monitoring, and cleaning plant and equipment in accordance with the relevant SOPs.
- all employees are responsible for reporting environmental risks and are instructed to note and observe any unusual odour occurrences and to report these to supervision or management without delay.

11.2 Training and Competency

All employees at PB Gelatins are made aware of the negative impact that odour emissions can have on the local community and the importance of maintaining and cleaning odour critical plant and processes.

Staff responsible for the operation, maintenance or repair of odour critical plant will be provided with a copy of the OMP and be trained and competent to carry out their tasks.

Specific training will be provided in relation to the operational systems for the effluent systems, DAF plant, balance tank, sludge transfer process and the bone skip. SOPs have been developed to describe these processes and are utilised in the training of staff.

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PB Gelatins will maintain a statement of training requirements for each operational post and keep a record of the training received by each person whose actions may have an impact on the environment.

12 DOCUMENT UPDATES AND REVIEWS

A periodic review and update of the OMP will take place on an annual basis, in line with the recommendations of the H4 Odour Management Guidance. However, the OMP is intended to be a live document which serves as a reference during day-to-day operations, and as such will be updated on a more frequent basis should the following occur:

- significant changes are made to the plant or operational practices;
- there is a change to the management structure, designation of responsibility or training provision;
- **NRW** requests that the OMP is updated, in their role as regulator; or
- complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this OMP.

Odour Management Plan

Reference ISO Document

Reference Risk Assessment

N/A

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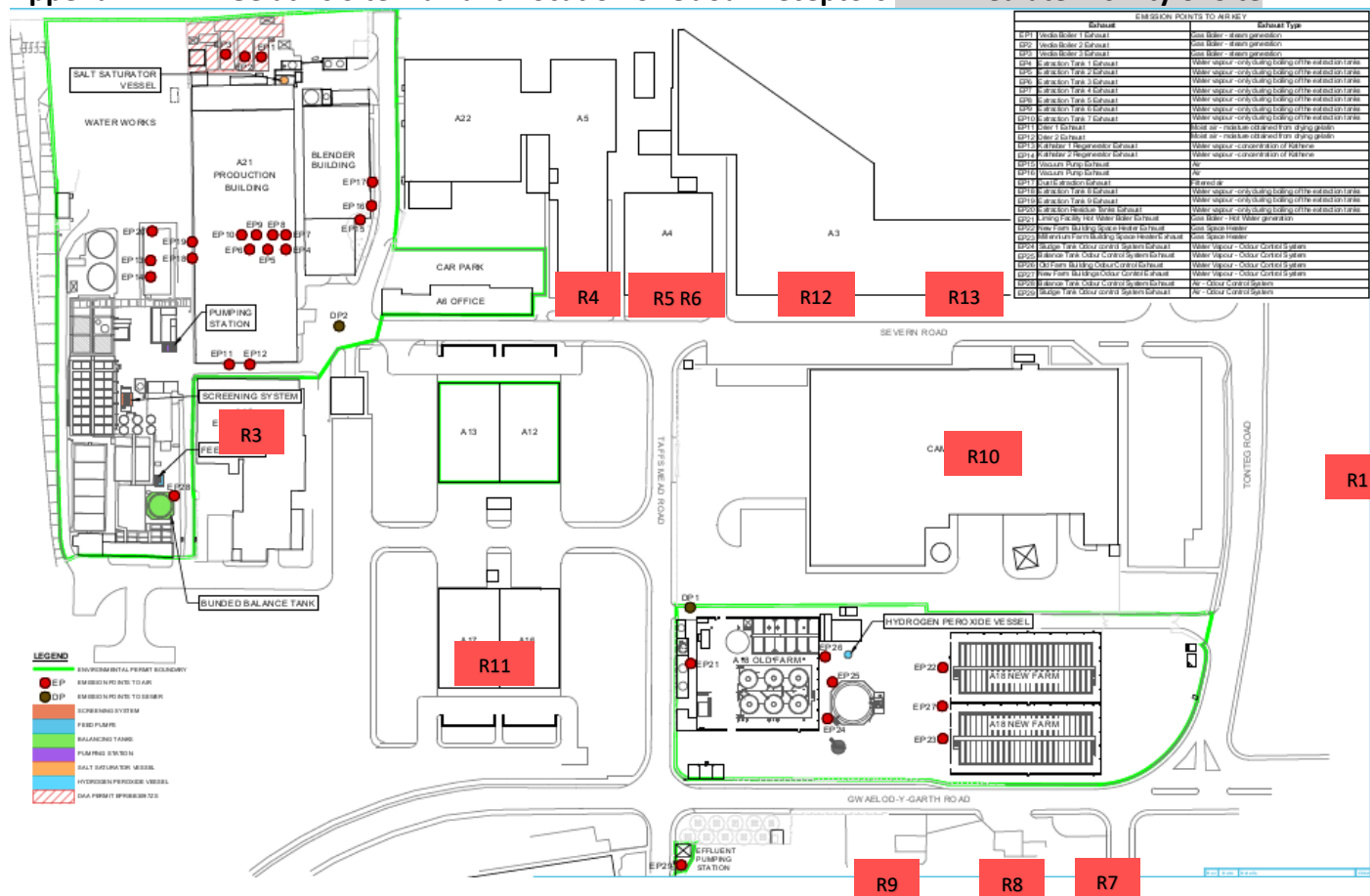
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Appendix 1 – PB Gelatins Site Plan and Location of Odour Receptors in Immediate Vicinity of Site



KEY:

Receptor	Property name	Address
R1	Bridge House	Williams Close, Pontypridd, CF37 5BH
R2	Pound Farm	Pound Farm Lane, Pontypridd CF38 1SU
R3	Egan Waste	
R4	A5 Hub Severn Road	Severn Road, Pontypridd, CF37 5TF
R5	Café	Severn Road, Pontypridd, CF37 5TF
R6	Petwise	Severn Road, Pontypridd, CF37 5TF
R7	Greggs Shop	Taffs Fall Road, Pontypridd, CF37 5TF
R8	The Welsh Shop	Taff Mead Road, Pontypridd, CF37 5TF
R9	Keyline Civils	Taffs Mead Road, Pontypridd CF37 5TF
R10	Griffin Mill	Tonteg Road, Pontypridd, CF37 5TF
R11	WJEC	Gwaelod-Y-Garth Rd, Pontypridd CF37 5SP
R12	Rizla House	Severn Road, Pontypridd, CF37 5TF
R13	Hutchings Vauxhall	The Vauxhall Centre, Pontypridd CF37 5SP

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Reference ISO Document

Reference Risk Assessment

N/A

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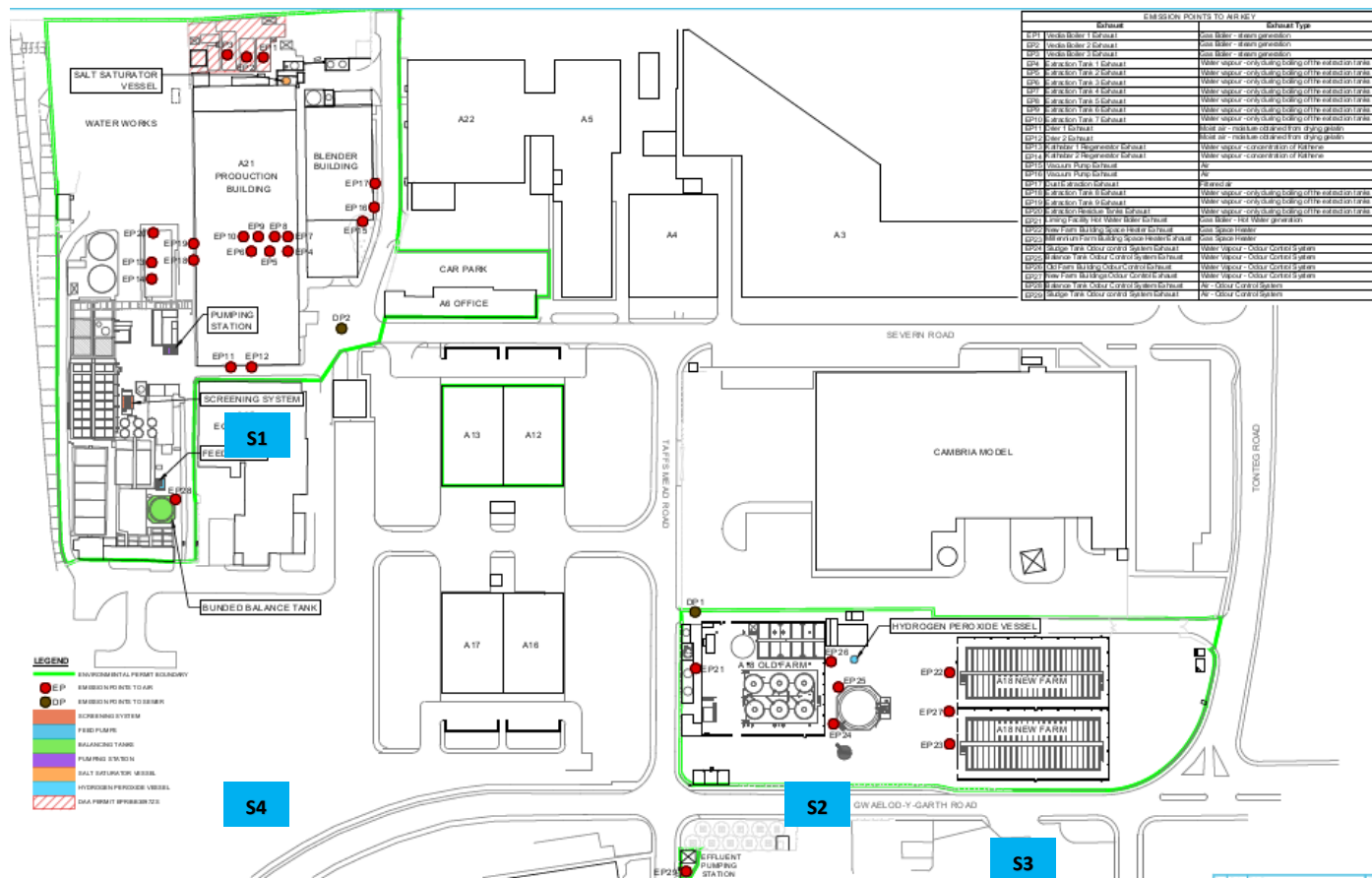
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Appendix 2 - Location of Potential External Odour Sources



KEY:

Potential Odour Sources (External)	Property name	Address	Process
S1	Egan Waste	Unit 15A Treforest Ind Est, CF37 5TA	Waste recycling
S2	Pughy's Mini Diner	Gwaelod-Y-Garth Rd, Pontypridd CF37 5SP	Burger Van
S3	Greggs Shop	Taffs Fall Rd, Pontypridd, CF37 5TF	Bakery
S4	Johnsons Workwear – Laundry Service	Unit A14 Treforest Ind Est, CF37 5SY	Industrial laundry

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Appendix 3 – Sniff Testing Odour Report Form

Odour report form				Date	
Time of test					
Location of test e.g. street name etc					
Weather conditions (dry, rain, fog, snow etc):					
Temperature (very warm, warm, mild, cold, or degrees if known)					
Wind strength (none, light, steady, strong, gusting) Use Beaufort scale if known					
Wind direction (e.g. from NE)					
Intensity (see below)					
Duration (of test)					
Constant or intermittent in this period or persistence					
What does it smell like?					
Receptor sensitivity (see below)					
Is the source evident?					
Any other comments or observations					

Intensity

- 0 No odour
- 1 Very faint odour
- 2 Faint odour
- 3 Distinct odour

4 Strong odour

- 5 Very strong odour
- 6 Extremely strong odour

Ref: German Standard VDI 3882, Part 14

Receptor sensitivity

- Low (e.g. footpath, road)
- Medium (e.g. industrial or commercial workplaces)
- High (e.g. housing, pub/hotel etc)

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Appendix 4: Odour Complaint Report Form

Odour Complaint Report Form	
Time and date of complaint:	Name and address of complainant:
Telephone number of complainant:	
Date of odour:	
Time of odour:	
Location of odour, if not at above address:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (eg from NE):	
Complainant's description of odour:	
o What does it smell like?	
o Intensity (see below):	
o Duration (time):	
o Constant or intermittent in this period:	
o Does the complainant have any other comments about the odour?	
Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure):	
Any other relevant information:	
Do you accept that odour likely to be from your activities?	
What was happening on site at the time the odour occurred?	
Operating conditions at time the odour occurred (eg flow rate, pressure at inlet and pressure at outlet):	
Actions taken:	
Form completed by:	Date Signed

Intensity

- | | | |
|--------------------|------------------|--------------------------|
| 0 No odour | 3 Distinct odour | 5 Very strong odour |
| 1 Very faint odour | 4 Strong odour | 6 Extremely strong odour |
| 2 Faint odour | | |

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Appendix 5: Odour Diary

Odour Diary					Form version 110319	Sheet No
Name:		Address:				
Telephone Number:						
Date of odour:						
Time of odour:						
Location of odour, if not at above address (indoors, outside):						
Weather conditions (dry, rain, fog, snow etc):						
Temperature (very warm, warm, mild, cold or degrees if known):						
Wind strength (none, light, steady, strong, gusting):						
Wind direction (eg from NE):						
What does it smell like? How unpleasant is it? Do you consider this smell offensive?						
Intensity – How strong was it? (see below 1-5):						
How long did go on for? (time):						
Was it constant or intermittent in this period:						
What do believe the source/cause to be?						
Any actions taken or other comments:						

Intensity

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