



FUGITIVE EMISSIONS MANAGEMENT PLAN

Environmental and sustainability solutions provided to
BRYN AGGREGATES LTD

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1.0 INTRODUCTION

This Management Plan addresses the need to manage the potential for fugitive emissions from the operations that may be considered as an environmental impact and a nuisance to neighbouring sensitive receptors, including operations related to the waste materials imported to, and permanently recovered at the quarry at Gelliargwellt Farm on behalf of Bryn Aggregates Ltd (hereon referred to as Bryn Aggregates).

Approximately 705,900m³ of inert general fill waste and soil waste material will be recovered to restore areas of the quarry that are no longer in use in line with condition 18 of Bryn Aggregate's planning permission (reference 12/0570/FULL) for the operation of the quarry.

1.1 Site Address

Bryn Aggregates Ltd
Gelliargwellt Farm,
Gelligaer,
Hengoed,
CF82 8FY

1.2 Operational Location

Grid Reference: Easting 312871, Northing: 196245

1.3 Site Description

The site has an area of approximately 29 hectares and comprises an operational quarry and agricultural land set within Gelliargwellt Farm. The primary vehicle access is from Gelligaer Road, which is located to the northwest of the site. It also connects neighbouring towns including Gelligaer and Penpedairheol which are located approximately 500m and 1,500m respectively, to the northeast of the site. Penybryn is located approximately 600m to the east of the quarry, with the Penallta Industrial Estate located slightly further east. Caerphilly is located approximately 8km south of the site.

The site is bound to the south by agricultural land and Parc Penallta Country Park, which comprises an area of public open space and woodland. Nelson Bog Site of Special Scientific Interest (SSSI) is located 350m to the south of the site. Waun Rydd Site of Importance for Nature Conservation (SINC) is located immediately adjacent to the north of the site and Coed Gelliau'r – Gwellt SINC is located approximately 550m to the west of the site and comprises an ancient woodland.

The wider farm site contains an anaerobic digestion facility, Materials Recycling Facility (MRF) and composting site to the east of the quarry.

1.4 Fugitive Emissions Management Requirements

The preparation of this document has been undertaken using the guidance outlined in Sector Guidance Note (SGN) IPPC 5.06, Developing a management system: environmental permits, and Control and monitor emissions for your environmental permit. The typical condition regarding emissions of substances not controlled by emissions limits (fugitive emissions) on a permit is as follows:

"Emissions of substances not controlled by emissions limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or, where that is not practicable, to minimise, those emissions."

The operator shall:

"If notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan. Implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency."

1.5 Fugitive Emissions

This Management Plan addresses the need to manage the potential for fugitive emissions from the operations that may be considered as an environmental impact and a nuisance to neighbouring sensitive receptors and operations. Fugitive emissions include dust, mud, litter and fugitive releases to water and ground.

Fine dusts, fumes and volatile organic compounds can potentially lead to serious health impacts and fugitive leaks to ground or water can have serious effects on water supplies and aquatic ecosystems. You need to prevent or minimise these, no matter how near or far people or other receptors may be.

Other pollutants, such as coarse dust, mud and litter may be only a localised nuisance. However, you do not have the right to cause pollution or nuisance outside your site due to your

activities. Your neighbours have a right to expect that your activities will not detract from their quality of life.

They have a right to expect that their environment will be free from emissions caused by your activities either on a continuous basis or at frequent intervals.

Examples of common sources of fugitive emissions related to the proposed activity are:

- Site traffic;
- Movement of waste for recovery; and,
- Accidental loss of containment from failed plant and equipment.

2.0 MANAGEMENT PLAN

The Fugitive Emissions Plan will identify sources and potential sources of fugitive emissions and will consider the risk to sensitive receptors. The fugitive emissions Management plan has been produced with the intention to reduce as a much as possible fugitive emission causing activities.

This Fugitive Releases Management Plan contains:

- An Assessment of the risks of fugitive emission problems, from normal and abnormal situations, including worst case scenarios, for example from weather, temperature or breakdowns and accidents.
- The appropriate controls (both physical and management) needed to manage those risks.
- Suitable monitoring.
- Actions, contingencies and responsibilities when problems arise.
- Regular review of the effectiveness of fugitive emissions control measures.

2.1 References

Documents to be viewed in conjunction with the Fugitive Emission Management Plan are as follows:

- EPR-B01 – Environmental Management System Manual
- EPR-B02 – Environmental Risk Assessment
- EPR-B06 – Accident Management Plan
- EPR-OP03 – Waste Recovery Procedure

3.0 SENSITIVE RECEPTORS

3.1 Personnel on Site

Personnel/operatives working on site are the closest receptors to any fugitive emissions produced on site, however due to consistent working conditions it may be unlikely that operatives would be particularly sensitive to fugitive emission or to changes/ fluctuations in fugitive emissions. All operatives shall be made aware of the issue of fugitive emissions on site and should be fully conversant with the contents of the Site Environmental Management System (EPR-B01) and this Fugitive Emissions Management Plan.

3.2 Neighbours

Neighbouring buildings and businesses are likely to be the most sensitive receptors to fugitive emission nuisances especially those not operating waste management facilities. Dust, fumes and litter will be particularly noticeable to neighbouring activities. The site is situated within a primarily agricultural area, with some residential. Good relationships with neighbouring land-owners and businesses are paramount in helping to anticipate potential problems and avoid them before official complaints are made. Bryn shall ensure:

- That all neighbouring buildings know how to contact the site if they consider fugitive emissions to be a problem (contact details will be clearly visible on the site sign along with Natural Resources Wales details); and,
- That any complaints are recorded and that problems, where possible, are dealt with promptly.

3.3 Sites of Special Scientific Interest

There is one Site of Special Scientific Interest (SSSI) within 500m of the site :

- Nelson Bog Site of Special Scientific Interest (SSSI) is located 350m to the south of the site.

There are also two Sites of Importance for Nature Conservation (SINC), within 550m of the site:

- Waun Rydd is located immediately adjacent to the site to the north.
- Coed Gelliau'r – Gwellt is located approximately 550m to the west of the site.

4.0 CONTROL MEASURES

4.1 Aerial Emissions Dust, Fibres and Particulates

There are activities on site that may create dust which could possibly drift off-site and cause an amenity nuisance. Such activities include:

- Handling, movement and tipping of waste received on site;
- Vehicle movements to and from the site, as well as around the site (vehicles may lead to the aerosolisation of dust during dry weather); and,
- Wind scouring of waste piles.

Dust production may increase during periods of strong winds or dry weather.

4.2 Methods of Prevention

In order to minimise the dust, potentially generated at the site, a set of control measures shall be implemented by the site manager to mitigate the effects of potential dust emitting activities identified. General measures will also be taken.

For full details of the plan refer to *EPR-B03 Dust Management Plan*.

4.3 Dampening

Dampening of material will be carried out in the following situations:

- During periods of dry weather, such as during summer;
- When dust emissions are observed by the Site Manager during the visual assessment or by operatives;
- During unloading, when the waste being imported has been identified as dusty;
- When dust emissions have been observed outside of the site boundary during the daily visual inspection;
- In response to any complaints received about dust from the site;
- When wind speeds are greater than 15mph; and
- When significant dust is observed on the site during routine site inspections.

There are a number of ways in which dampening on site can occur. The road down to the weighbridge from the B4254 and the tracks on site are all served by a sprinkler system which can be operated at any time in response to the above situations. Waste material being deposited or shaped on the quarry site can be dampened using a mobile bowser if required.

The water source for both of these dampening mechanisms is the same; extraction from the quarry under licence. This water is stored in a submerged tank with two pumps. The sprinklers and bowser are inspected daily when in use and any repairs required carried out immediately. Over the winter period when it is wetter, the sprinklers are removed and serviced. The two water pumps are also serviced at the required intervals.

4.4 Mud or Dust on the Road

On the quarry site, measures shall be provided, operated and maintained with the objective of preventing the deposit or tracking of mud or debris arising from the site onto public areas outside the site, which shall include public highways and areas of public access.

For full details of the plan refer to *EPR-B03 Dust Management Plan*.

4.5 Odour

Odour is not considered to present a significant risk due to the nature of the wastes permitted on site.

If any complaints are received by the site regarding odour, an assessment of the materials being processed, and the site activities being carried out at the time of the complaint shall be undertaken to determine the cause of the odour with the results of the assessment recorded in accordance with the operator's wider corrective/preventative actions procedure. If the site is found to be the cause of the odour, remedial action shall be taken immediately to further prevent odour being emitted from site.

4.6 Noise and Vibration

All vehicles, plant and equipment used on site will be operated and maintained in line with manufacturer's recommendations and the site's maintenance schedule, and works will be carried out during operational hours, with the objective of mitigating noise pollution. In the event of excessive noise emanating from the site, remedial action shall be taken immediately. The incident and the remedial action shall be recorded in the site diary.

Refer to document reference *EPR-B05 Noise and Vibration Management Plan* for the full noise and vibration plan applicable to the operations.

4.7 Control of Pest Infestation

It is considered that the nature of the waste to be accepted onto site results in the risk of pest infestation being low. Nevertheless, measures shall be implemented and maintained throughout the operational life of the site to control and monitor the presence of pests on the site. An ongoing watching brief for the identification of any pest infestations will be part of the daily routine for site operatives. In addition to this, an inspection of the facility for pest infestations shall be carried out and recorded at least at weekly intervals by a professional pest control contractor (Rathbone Pest Control).

On detection or notification of pest infestations, or evidence of such outside of these visits, immediate action shall be taken to secure the attendance of a professional pest control contractor (Rathbone Pest Control), to eliminate the pest infestation. In addition, any waste subject to infestation or that has attracted vermin will be considered for removal from the site. The incident and the remedial action shall be recorded in the site diary.

4.8 Control of Litter

All waste inputs will be recovered in the final location for the waste, hence the risk of litter escaping site is low. Nevertheless, staff will inspect the site daily and remove any litter which has accumulated. Any actions required following a site inspection will be recorded in the site diary. In the event that litter does escape from the site, it shall be retrieved as soon as is practicable, and no later than one hour after the end of the working day.

4.9 Surface Water and Rainwater Control

During the waste deposit for recovery activity, surface water run-off from the imported inert waste will be captured by the quarry's drainage system. Surface water in the quarry is directed to the quarry sump located on the floor of the quarry. The surface and rainwater are then pumped from the quarry sump into one of the settlement ponds located to the southwest of the quarry. The purpose of the settlement ponds is to enable any solids in the surface water to settle out before the clean water is transferred into a clean water lagoon for site use or discharged into the un-named adjacent water course under an environmental permit.

4.10 Spillage, Leaks, or Release of Fumes

All spillages will be dealt with immediately. All vehicles, plant and equipment used on site will be operated and maintained in line with manufacturer's recommendations and the site's maintenance schedule, with the objective of preventing environmentally harmful leaks and spills.

In the event of any potentially environmentally harmful leaks or spillages, the following remediation procedure will be implemented immediately and recorded:

- Raise the alarm, giving brief details of location and product involved,
- Close down all isolated operations.
- Remove all sources of ignition.
- Subsequent and appropriate action should be carried out to bring the emergency under control (if safe to do so) and prevent further risk to personnel on and off site and to the environment.
- Prevent spread of spilled product.
- Take steps to contain and safely dispose of spilled product.
- Determine the wind direction and any likely effects of fumes and decide whether emergency services are required.

4.11 Adverse Weather Conditions

Adverse weather conditions may affect fugitive releases given the nature of waste materials accepted onto site.

Weather	Impact
Heavy Rainfall	Heavy rainfall may increase run-off from the wastes being recovered on site. In the event of continuous heavy rainfall all waste management operations may continue subject to a site risk assessment carried out by the site manager and recorded in the site diary, to ensure minimum operation requirements are still available.
Strong Winds	The waste material will be compacted as part of landscaping works, which will also act to consolidate the soil and reduce the amount of dust that can be generated by the wind. During warmer months the waste material can be dampened when conditions are very windy or dry to prevent dust and bioaerosol particles becoming suspended in the air and dispersing.
High Temperatures	High temperatures may affect Fugitive Emissions through dry weather. Dust generation attributable to vehicle movements will be controlled by the maintenance and sweeping of the site access roads. During dry weather action will be taken to spray the roads using a water bowser.

Snow, Frost and Ice	Snowfall, frost and ice are unlikely to affect Fugitive Emissions from the site.
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4.12 Fugitive Leaks from Plant

An effective maintenance schedule will be in place to minimise the risk of leaks from on-site plant and equipment. Please see EPR-OP04 for details of the maintenance procedure employed on site.

4.13 Accident Management

Accident management has been identified and covered separately within the site-specific Accident Management Plan (EPR-B06).

4.14 Housekeeping

Good housekeeping practices on site will minimise the potential for fugitive releases. These will include:

- No storage of waste in an area not designated for recovery;
- General housekeeping and inspection procedures maintained. Disinfectant is used as required; and,
- Ongoing maintenance of site plant and machinery.

5.0 MONITORING

Bryn Aggregates will ensure, by implementation of a monitoring plan, that fugitive emissions from the site are limited and where possible prevented in the first instance. Through effective mitigation the impacts of any fugitive emissions shall be reduced. The monitoring of fugitive emissions shall include:

- Daily site walkovers;
- Thorough site inspection once a week (minimum);
- End of day litter checks/picks; and,
- A prompt response to any complaints.

Operatives shall be fully conversant with the contents of the Permit, the Management System and Fugitive Emissions Management Plan and will be relied upon to remain observant and to draw attention to any non-conformances, adverse operating conditions and any mitigation or management failure.

Records shall be kept of any monitoring/inspection carried out.

5.1 Dust Monitoring

Dust monitoring will be carried out at four points on the site boundary twice daily, once at mid-morning and once at mid-afternoon, as part of a routine visual inspection of the site. Observations will be recorded and kept onsite.

Operational staff will report if there are significant dust or particulate emissions during the handling and movement of waste on site to the Site Manager immediately and it will be recorded in the site diary. Significant emissions are considered to be those where dust could potentially leave the site boundary. Where dust emissions are high during the handling and movement of waste, operations will cease, and the site boundary will be inspected to ensure that dust isn't being emitted from the site. If dust emissions are observed outside of the downwind site boundary then material shall be dampened before works can recommence.

Bryn Aggregates have agreed with Caerphilly County Borough Council (CCBC) to assess total dust, PM10/PM2.5/PM1 concentrations using a Turnkey Osiris real-time dust monitor. The monitor is located in a field to the east-northeast of the quarry, immediately west of the houses on Brynheulog Street.

The data is recorded every minute and the monitor sends an alarm when the limits are breached. An alarm goes off when the average concentration for PM10 or PM2.5 is above 40ug/m³ for 5 minutes whilst the wind direction is between 180° to 270°. An alarm also goes off when the average concentration is above 200ug/m³ over a 24-hour period whilst the wind direction is between 180° to 270°.

The data is summarised into a report on weekly basis and sent to the Operator who stores this on site. Copies of the report are available to CCBC on request. If dust complaints are received, the data from the corresponding period will be investigated.

Dust monitoring results, including the dates, times, wind direction, weather conditions and observations will be recorded and retained on the site.

5.2 Response to Dust Events

Where the level of dust is considered high i.e. when the continuous monitor alarm is raised or when dust is detected at the site boundary monitoring locations and the deposit for recovery activities are considered to be the source, the Site Manager will conduct an investigation to identify the cause of the dust emissions.

If the dust emissions are attributed to an activity on the site and mitigation measures have failed, the activities that are the source of the emissions will cease until remedial measures have been implemented. Visual monitoring will be increased as necessary along the site boundary until the dust problem is resolved.

Where dust emissions are continually identified as excessive on site and the continuous monitors alarm is raised or when complaints are received repeatedly, the Site Manager will

review the mitigation measures and monitoring strategy detailed in this Fugitive Emissions Management Plan to prevent emissions from being released from the site.

5.3 Monitoring Records

Bryn Aggregates shall keep records of site inspections. Any adverse operating conditions, non-conformances, complaints and mitigation/management failure resulting in an accident or non-compliance with the Permit shall be recorded in accordance with the operator's wider corrective/preventative actions procedure.

5.4 Community Liaison

Should there be any issues relating to fugitive emissions emanating from the quarry site during the deposit for recovery activities, Bryn Aggregates shall message the new community notification WhatsApp group and leave a message on the local community Facebook page. These messages shall detail the specific issue and the action being taken by Bryn Aggregates.

5.5 Complaints

All complaints received concerning fugitive emissions from the site will be dealt with in accordance with the company's environmental management system complaints procedure.

Bryn Aggregates shall decide and implement any necessary action in response to any complaints or concerns expressed by interested parties, including operatives, customers, clients and regulatory authorities.

The operator shall record the:

- Name and contact details of the person who expressed concern or made a complaint;
- Specific subject(s) of the concern or complaint;
- The source / location of where the complaint comes from;
- Date and time communicated to the producer and name of the person to whom it was communicated;
- Nature and date(s) of any actions and checks and who carried them out;
- Nature and date of any response to the person who expressed a concern or made the complaint; and
- Name of the person who communicated the response.

The complaint form can be seen in Section 6 below.

Upon receipt of a complaint, Bryn Aggregates will open an investigation immediately. This will involve an investigation into site operations at the time of the complaint, weather conditions at the time of the complaint and any other points of note such as off-site activities being undertaken at the time of the complaint. Where required, corrective actions will be taken to reduce/eliminate the release of emissions following the mitigation measures set out in Section 4 above. Where mitigation measures are unsuccessful, the site activities may be stopped on the instruction of the Site Manager until the wind direction changes or the cause of the release is identified and corrected. Each complaint will be treated in the same manner, on a case by case basis. Bryn Aggregates will complete the complaint form within 48 hours of receipt of the complaint. The completed complaint form is stored in the site office.

Natural Resources Wales (NRW) shall be informed of any emissions, not controlled by an emissions limit, which have caused, is currently causing or may cause significant pollution. Complaints received by NRW relating to dust emissions from the site will be dealt with as soon as practicable upon notification.

5.6 Responsibility

The Site Manager is responsible for this Fugitive Emissions Management Plan and the procedures within it. Should the Site Manager be away from the site, responsibility will rest with the designated deputy.

6.0 ANNEX – COMPLAINTS FORM

Date:		Ref No.	
Name, address and phone number of complainant.			
Time and date of complaint.			
Date, time and duration of offending release.			
Weather conditions (e.g., dry, rain, fog, snow).			
Wind strength and direction (e.g. light, steady, strong, gusting).			

Complainant's description of dust: -Duration -Constant or intermittent			
Has complainant any other comments about the offending release?			
Any other previous known complaints relating to installation?			
Any other relevant information.			
Potential dust sources that could give rise to the complaint.			
Operating conditions at the time offending dust release occurred.			
Action taken			
Final outcome			
Form completed by (signed):		Date	