


H1 Environmental Risk Assessment

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Customer:	Jonathan Pallas	Recover Blaenavon Ltd
Requirement:	H1 assessment	New application
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Site location and background Information

Located on the perimeter the Gilchrist Thomas Industrial Estate, the smaller Kays and Kears industrial Estate lies c.550m directly Northwest of the town of Blaenavon and approximately 8km North of Pontypool. These are the closest bulk residential areas to the proposed site.

The Site is surrounded by sporadic areas of woodland with intervening belts of fields beyond. In the wider landscape, the land-use is dominated by rural pastures, upland agricultural land and industrial estates.

The treatment and recycling activities on site involve the processing of waste material through the internal plant system to create new plastic granules.

The H1 Risk Assessment includes full consideration of any impacts from the site on local environmental designations within 1km of the site. These, as well as others are listed below:

- Site of Special Scientific Interest (SSSI) the Bloreng, 900m to the Northeast.
- Site of Special Scientific Interest (SSSI) the Siambre Ddu, 1.9km to the North.
- Local Nature Reserve (LNR) The Garn Lakes, 200m to the West.
- Local Nature Reserve (LNR) The Cwmavon Corridor starts at 1.8km to the Southeast.
- The site is also located within a Source Protection Zone.
- The Afon Llwyd flows within 400m of the site boundary.
- The site is located within an area deemed high risk when considering flooding from surface waters/small watercourses.
- There are several Historic Monuments in and around the site (the main protected/listed ones are within the areas below) such as the Blaenavon Viaduct and The Dog Stone would also need to be considered within an emergency.
- There are several scheduled monuments within proximity of the site including Old Coal Pits to the North, Garn Road Powder House to the North east, Pwll du Tramroad tunnel to the north east, Blaenavon Engine Pit to the South, Blaenavon Upper brick yard to the North east and the Coity Quarry and Inclines to the South West.
- There are approximately 40-50 listed buildings within 1km of the site. These are split across 3 main areas such as the Big Pit Museum to the South West, the heritage railway to the South and the Blaenavon ironworks to the East. Additionally, the entire area that surrounds the site forms part of the Blaenavon Industrial landscape as a World Heritage Site. Contact details for these sites are held within the site offices in case of emergency.

This H1 Assessment considers the sources of the risks, the receptors, and the possible pathways from source to receptor. Abatement techniques (should they be required), are considered as is the probability of exposure to the risk, the consequences and the overall risk posed.

Hazard	Receptor	Pathway	Risk Management	Exposure Probability	Consequence	Overall Risk
Odour						
Odour from waste delivery, off-loading, storage and processing.	Residential and industrial units	Air	Due to the nature of the wastes being applied for, odour is not foreseen to be an issue. The baled plastic packaging wastes do not typically present as odour producing waste as they originate from non-food packages.	Unlikely.	Odour annoyance to anyone living or working close to the site.	Not significant
Odour from recovered materials, prior to off-Site dispatch.	Residential and industrial units	Air	Due to the nature of the wastes being applied for, odour is not foreseen to be an issue. The baled plastic packaging wastes do not typically present as odour producing waste as they originate from non-food packages.	Unlikely.	Odour annoyance to anyone living or working close to the site.	Not significant
Noise and Vibration						
Engine noise from vehicles entering/ exiting the Site, on site vehicles, including reversing beepers.	Residential and industrial units in closest proximity.	Noise via atmosphere and vibration through ground.	<p>To minimise noise emissions, all vehicles, plant and machinery operated at the Site are maintained in accordance with the manufacturer's specification.</p> <p>Plant and vehicles are switched off when not in use and no activity is carried out beyond the permitted hours of working.</p> <p>Speed limits are imposed across the site to avoid revving of engines.</p> <p>Routine maintenance is planned and regular.</p> <p>In the event of any noise complaints from local residents and other businesses, details will be logged in accordance with the EMS.</p> <p>Mitigation measures will be reviewed and good practice for the control of site noise sources will be implemented as appropriate. For example, reversing beepers can be altered to the 'white noise' type to be less invasive.</p>	Unlikely due to the mitigation measures in place.	Noise annoyance to anyone working or living close to the site.	Low

Noise from waste processing activities	Residential and industrial units in closest proximity.	Air	<p>A review of the plant to be used has been undertaken for the site and has identified potential noise sources.</p> <p>The site building acts as a noise barrier as the processing is all undertaken internally. Only storage of waste is external.</p> <p>Drop heights are not to occur on site as the waste is baled.</p> <p>The plant and equipment are also maintained in accordance with the manufacture instructions.</p> <p>Due to the natural and built barriers across and surrounding the site, it is extremely unlikely that the environmental designations will be impacted by noise created and the majority of industrial/residential units will not be impacted to an extent beyond 'normal' levels.</p> <p>Noise Impact Assessment has confirmed that levels created by the site are significantly above normal background levels at one receptor location.</p> <p>BAT is being employed where possible on site. Recommendations in the NMP are to explore further BAT measures (see attached report).</p>	Likely	Noise nuisance to a local receptor	High
Fugitive Emissions-air						
Dust from waste processing activities	Local industrial units and residential areas. Closest environmental designation.	Air transport, inhalation and/or deposition	<p>The waste accepted and processed on the site is considered a low dust creating and emitting waste.</p> <p>Baled plastic, in its largest form is processed inside the building only.</p>	Unlikely due to mitigation measures and prevailing wind direction.	Potential harm to human health – respiratory irritation and illness. Potential	Not significant

SSSI/LNR damage
through deposition.

All shredding is undertaken inside the building within a sealed unit that houses both dust and acoustic abatement technology.

A dust extraction unit is sealed and integral to the processing plant.

The roller shutter doors are closed when not in use.

Blorenge SSSI is located circa 900m from the site. Siambre Ddu is located 1.8km from the site. A local nature reserve (Garn Lakes) is 200m to the West. The Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning (May 2016) states that "it is commonly accepted that the greatest impacts will be within 100 m of an emission source, and this can include both large (>30 µm) and small dust particles.

The greatest potential for high rates of dust deposition and elevated PM10 concentrations occurs within this distance. Intermediate-sized particles (10 to 30µm) may travel up to 400 m, with occasional elevated levels of dust deposition and PM10 possible. Particles less than 10µm have the potential to persist beyond 400 m but with minimal significance due to dispersion.

Due to the distance of the site to the SSSI, any inadvertent dust emissions from the facility are highly unlikely to have any notable impact on the designated site. The LNR is closer but is the opposite side of the building to the doorway.

Dust from vehicle movements.	Residential and industrial units. Local environmental receptors.	Air transport then inhalation and/or deposition.	<p>Vehicle movements have the potential to emit low levels of particulates particularly during prolonged dry periods e.g. summer months. Procedures to prevent dust emissions include the following: the site entrance and internal roads comprise engineered concrete surfaces. Site vehicles are limited to speeds of ≤10 mph.</p> <p>The waste storage is external but on concrete. The processing and product storage areas comprise engineered concrete surfacing and are inside the buildings.</p> <p>If on-site conditions become dusty, a water hose will be used on the site access road and the external working areas, where required. The hose will only be used to lightly dampen the surface to prevent dust being created. The water used will be a fine spray and not a deluge, therefore water usage will be at a minimal and only what is required preventing run-off.</p> <p>In the unlikely event of the adjacent public highway become muddy, a road sweeper will be hired as needed.</p> <p>The Site boundary is inspected daily for any dust or particulates escaping the site. In the event of any dust emissions or complaints received about dust or particulate emissions, details will be logged in accordance with the EMS. Mitigation measures will be implemented, as appropriate.</p>	Most airborne dust particles fall out of the airstream within 100m of travel, there is a belt of trees bordering the site that will serve as a natural barrier. The likelihood of dust impact is therefore low likelihood.	Potential harm to human health - respiratory irritation and illness.	Not significant as probability of exposure is low.
Heat from stack	Residential and industrial units	Air	<p>The stack on site isn't connect to the exhaust system. The sealed exhaust controls and removes all the dust/particulates that may be created through the</p>	Unlikely	n/a	Not significant

heat process (captured in filter bags). The stack is for the release of latent heat only to prevent the build-up of condensation inside the building.

Fugitive emissions-water

Flood water and contaminated surface water runoff.	Local surface waters, groundwater, and local environmental designations.	Direct runoff.	<p>The Afon Lwyd flows approximately 450m to the South/South-West of the site boundary.</p> <p>The distance to the nearest surface water body would suggest that it is extremely unlikely to be potentially at risk of cross contamination from groundwater. The site entirely concreted and there is no pathway for water migration.</p> <p>The site drains via a combined foul line that has no connection to any surface water.</p> <p>There is no pathway from the site to the environmental designations (SPZ identified below) located nearby and they are a significant distance away in so far as water flows are concerned.</p> <p>The site has a kerb system that is constructed around the entire perimeter of the permitted area and segregates the soft landscaping areas from the yard surfaces.</p> <p>The site is located within a SPZ with bedrock aquifer so any flooding caused by surface water or small watercourses, could escape through the grassed areas/earth banks of the site and infiltrate the soils. The entire site benefits from a kerb, before this is</p>	Unlikely	<p>Increased suspended solids potential. Contaminants from small organic component of waste stream unlikely.</p> <p>Pollution of the SPZ through ground.</p>	<p>Not significant</p> <p>Low</p>
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topped, the centrally located drainage system would allow for the escape of water to the network.

In the event of a fire, a floodgate is to be installed to contain any water created to within the bay impacted. This would prevent/limit surface flooding and reduce the likelihood of the SPZ being impacted.

Acceptance of non-permitted waste	Groundwater	Infiltration	Pre-acceptance checking is required on the material before the waste is agreed to be accepted. Only material that confirms that all contaminants are picked prior to arrival are to be accepted.	Unlikely	Potential pollution of the ground and groundwater.	Not significant
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Fugitive Emissions-mud and debris

Mud and debris being liberated beyond the Site boundary.	Neighbouring roads.	Tracked off site.	<p>The Site entrance and access road comprise engineered concrete surfaces, which are swept or hosed down to prevent any mud and dust accumulation, as required. All Site vehicles are limited to speeds of ≤10 mph.</p> <p>As part of the daily inspection regime, the Site is visually inspected for the presence of mud and debris. Should the adjacent public highway become muddy, a road sweeper will be contracted and deployed on an as and when required basis. If the problems do occur and are persistent, a wheel wash (or similar) will be considered.</p>	Unlikely	Potential risk of vehicle accidents if mud accumulation occurs and is not treated.	Not significant
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Pests and vermin

Pest and/or vermin infestation of waste loads.	Residential and industrial units	Airborne (flies and other insects, scavenging birds). Land (rodents and other vermin).	The waste loads are not inherently attractive to pests and vermin and are not likely to provide a source of food as the material is plastic packaging only (non-food).	Very unlikely	Potential nuisance to anyone living or working close to the Site.	Not significant
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Litter						
Litter deposits within waste loads or on Site.	Residential and industrial units	Airborne	<p>The types of waste to be accepted can be associated with litter. The material arrives baled and tied to prevent the bale from losing integrity and contents.</p> <p>Any small-scale contaminants within the material will be hand-picked when taken inside and the bales split open, the material is stored in a wheelie bin on site pending recovery elsewhere.</p>	Low	Potential nuisance to anyone living or working close to the Site.	Low
Fires						
Fires on site from plant, equipment and waste storage. (Including arson and/or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	<p>Staff, visitors, other personnel on Site, local population, plant and equipment.</p> <p>Surface water courses, soil and groundwater.</p> <p>Local environmental designations</p> <p>Local Historical sites such as World Heritage Buildings, Historic Monuments, Scheduled Monuments, Local Wildlife and Nature Sites and Listed buildings (identified above).</p>	<p>Air transport of smoke.</p> <p>Spillages and uncontained firewater, e.g. by direct run-off from Site.</p> <p>Impacts on visitors to the area (closure due to smoke).</p>	<p>Due to the waste types accepted, the tonnages involved and the low storage time, they are not going to be the likely cause of a fire. The most likely cause of a fire would be the plant and equipment which are maintained on a regular basis to ensure they are working effectively to minimise the risk of fire. The site is secured outside of operational hours and monitored by both CCTV and on-site security guards.</p> <p>Fire extinguishers are located across the site at several locations. Office and site staff are trained in the event of a fire to use the fire-fighting equipment available. If deemed necessary, the fire brigade will be contacted, and Natural Resources Wales informed.</p> <p>The plant itself is designed to use significant levels of heat application to process the plastic. The heat level achieved is 200°C in the melt phase of the process. This increases the risk on site. However, the plant has several internal safeguards that monitor the heat level. If the 200°C mark is exceeded an alarm is</p>	Low	<p>Respiratory irritation, illness and nuisance to local population and businesses.</p> <p>Injury to staff, fire fighters or arsonists / vandals.</p> <p>Pollution of water, air and soils.</p>	Low

triggered and the plant cuts out. Water is used to cool the internal heat chamber to reduce the temperature once the alarm sounds.

Pollution via air has the potential to impact on local environmental designations and sites. Places that attract visitors may have to close due to inhalation risk and potentially lose income. However, due to the nature of the site and the controls in place, the duration is likely to be short. Distances to the designations range significantly from approximately 50m to over 900m therefore dispersal rates are relatively high for small events. The direction of the prevailing wind would generally take the smoke towards the Mountain (to the North-East) meaning that greatest dispersal effect would occur.

No materials are burnt on Site.

Leaks and Spillages

Leak from the oil / diesel storage areas on Site (including overfilling, vandalism etc.)	Surface water, groundwater, and local environmental designations.	Percolation through the ground. Overland flow	<p>All on site vehicles are inspected daily before operation to identify any leaks which will be dealt with accordingly.</p> <p>Absorbent material contained within spill kits are kept on site and used by trained staff to treat any spillages of potentially polluting liquids.</p> <p>Due to the location and distances of the environmental designations, pollutions of this nature are extremely unlikely to impact them. Spillages of this nature are small and localised which would not leave the perimeter of the site.</p> <p>All refuelling takes place within the bunded area where the fuel store is located. The store is locked and bunded to at least 110% of capacity. The</p>	Unlikely	Potential contamination of local water courses and underlying groundwater.	Not significant
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			vehicles are taken to the fuel store where concrete and spill kits are present.			
Surface water and fire water flooding	SPZ 1	Infiltration through soft landscaped areas on site	See attached sheet	Unlikely due to mitigation measures adopted	Potential pollution of the SPZ 1.	Low-Medium

To create this Environmental Risk Assessment, H1 software was used:

Waste type	Nature of waste	Hazard rating	R or D method	R or D code	R or D method impact score	Amount of waste per year (tonnes)
Non-hazardous Plastic	Non-hazardous	2	Recycling	R3	3	20,000

Plastic processing= $2 \times 3 = 6$ $\times 20,000 = 120,000$ total impact score.

This Risk Assessment should be reviewed if it is no longer valid due to operational changes etc or it shall be review annually to ensure that it is still current and accurate.

Low

Medium

High

Probability of exposure

Medium	High	Extreme Risk
Low	Medium	High
Not significant	Low	Medium

Magnitude of Risk

Consequence of exposure