



Environmental Risk Assessment

Geminor UK, St Mark Street, Hull: Environmental Permit Variation Application

Geminor UK Limited

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Basis of Report

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1.0 INTRODUCTION

Geminor UK Limited (Geminor) has retained SLR Consulting Limited (SLR) to prepare an application to vary the Environmental Permit (EP) (Ref: EPR/GP3303PN) issued under the Environmental Permitting (England and Wales) Regulations (as amended) 2016 for the Materials Recycling Facility (MRF), located on St Mark Street, Hull, HU8 7ED.

This Environmental Risk Assessment (ERA) is a simple assessment of the risks to the environment and human health from accidents, odour, noise and fugitive emissions that may be associated with the proposed variation of the EP for the MRF at St Mark Street.

This EP variation application seeks to make the following changes:

- Increase the maximum annual throughput;
- Include additional EWC codes; and
- Increase the site's maximum waste storage capacity.

There is no proposed changes or additions to the waste treatment activities currently carried out at the facility.

Only the above changes are assessed part of this ERA.

1.1 Methodology

This ERA is an assessment of the of the risk to the environment and to human health that may be associated with the proposed EP variation.

The assessment has been completed in accordance with the Environment Agency (EA) Technical Guidance '*Risk Assessments for your Environmental Permit*', last updated August 2022¹. The aim of the assessment is to identify any significant risks and to demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage these risks. The EA Guidance requires all receptors that are near the site and could reasonably be affected by the activities to be identified and considered as part of the assessment.

This ERA uses the following approach for identifying and assessing the risks from the proposed variation to the EP:

- Step 1** Identify and consider risks for your site and the sources of the risks.
- Step 2** Identify the receptors at risk from your site.
- Step 3** Identify the possible pathways from the sources of the risks to the receptors.
- Step 4** Assess risks relevant to your specific activity and check they are acceptable and can be screened out.
- Step 5** State what you will do to control the risks if they are too high.
- Step 6** Submit your risk assessment as part of your EP application.

Section 2.0 of this document is a screening step to identify the receptors at risk as part of this assessment.

Section 3.0 identifies people or parts of the environment that could be harmed (at potentially significant risk) by the activity. The ERA for a bespoke EP variation application requires all

¹ [Risk assessments for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit)



receptors that are near the site and could reasonably be affected by the activities to be identified and considered as part of the assessment.

Therefore, for the purpose of this report:

- A 1km radius from the site's EP boundary has been adopted in reviewing RAMSAR, SAC, SPA and SSSIs and sensitive receptors of ecological importance along with features such as sites of cultural and natural heritage; and
- A radius of 500m from the site's EP boundary has been adopted for all other potentially sensitive local receptors (for example, residential, commercial, industrial, agricultural and surface water receptors).

The potentially sensitive receptors are illustrated on Drawing 003 ,and described in Table 3-2 below.

Section 4.0 of this document presents the assessment and demonstrates that any risks of pollution or harm will be mitigated to manage the risk.

This ERA should be read in conjunction with the following documents submitted with this EP variation application:

- Application forms:
 - Parts A, C2, C3, and F1;
- Drawings:
 - Drawing 001 Site Location Plan
 - Drawing 002 Site Layout, Fire Management and Fire Prevention Plan
 - Drawing 003 Environmental Site Setting
- Non-Technical Summary (NTS);
- Updated Best Available Techniques and Operating Techniques (BATOT) document; and
- Updated Fire Prevention Plan (FPP).

2.0 Identifying the Risks

Step 2 is a general screening step to identify the potential risks to the environment from the development. The following is generally considered to require assessment for bespoke operations:

- Amenity and Accidents;
- Site Waste (installations only);
- Global Warming Potential;
- Odour;
- Climate Change;
- Noise; and
- Point source emissions to air, water and land.

There will continue to be no point source emissions to groundwater, surface water, air or land resulting from the proposed variation application, and neither will there be any site waste arising or global warming potential.



Therefore, only 'Amenity and Accidents' remains applicable for assessment in this instance, and includes the consideration of odour, noise and vibration, fugitive emissions (including dust, mud, litter and pests) and accidents.

3.0 Site Setting and Receptors

This section identifies the site setting and potentially sensitive receptors in the vicinity of the site.

3.1 Site Setting

The site is situated approximately 1.5km north east of Hull city centre within a predominantly commercial area. The site is bounded by St Mark Street to the south which links to the A1165 to the west. The National Grid Reference (NGR) for the site is TA 10546 29719.

The immediate surrounding land use is predominantly commercial land. There is a residential area approximately 30m to the south along Redcar Street and the River Hull is located approximately 200m north west of the site.

Access to the site is via St Mark Street. The site's location is illustrated on Drawing 001 and the EP boundary and Site Layout is illustrated on Drawing 002.

The surrounding land uses and local receptors within 500m are identified on Drawing 003, in addition to the cultural and natural heritage within 1km,

A summary of the site's immediate surrounding land uses is identified in Table 3-1 below.

Table 3-1 Surrounding Land Use

Boundary	Description
North	Commercial premises dominate the area, beyond which lies a local cycle path and a railway to the north east.
East	Large areas of commercial premises, with a local cycle path adjacent to the EP boundary, an area of open ground and a small residential area.
South	A small residential area surrounded by commercial premises. Beyond this lies a number of listed buildings, and the A165.
West	Large areas of commercial premises, the River Hull and a number of listed buildings.

The immediate surrounding land uses are described in further detail below.

3.1.1 Agricultural / Open Land

There is one area of open ground approximately 10m south west of the EP boundary and a further area approximately 390m to the north.

3.1.2 Commercial and Industrial

The site is situated within a predominantly commercial/industrial area, and commercial premises can be found on all sides of the EP boundary. A summary of the businesses currently occupying this land is as follows:

- North: Hull Self Storage and Vic Coupland Ltd (electrical engineering) – adjacent;
- East: Vallectric Limited, Professional Washroom Services Northern Ltd, and Rydan Design and Interiors (Home Furniture Shop) – 25m;



- South: Autoelectric Services (auto electric services) and Dortek (industrial door specialist) – 10m;
- West: NBM Timber Products (A pallet storage yard – adjacent).

3.1.3 Residential

The closest residential properties to the site are located approximately 30m south of the EP boundary along Redcar Street. Further residential areas lie to the north along Dansom Lane and east along Holderness Road approximately 310m and 380m respectively.

3.1.4 Local Transport Network

The site is bounded to the south by St Mark Street. The A1165 Cleveland Street runs from north to south approximately 90m north west of the site. A cycle path lies adjacent to the eastern boundary and a local railway line is found approximately 430m north east of the site.

3.1.5 Surface Water Features

At its closest point, the River Hull lies approximately 200m north west of the site boundary and flows south towards the Humber Estuary. There are no further surface water features within 500m

3.2 Geology, Hydrogeology and Hydrology

3.2.1 Geology

A review of the British Geological Survey (BGS) map², reveals that the site is underlain by a bedrock of Burnham Chalk Formation which is indicative of a local environment previously dominated by warm chalk seas.

Superficial deposits are comprised of Tidal Flat Deposits which indicates a local environment previously dominated by shorelines.

3.2.2 Hydrogeology

3.2.2.1 Aquifer Designations

The bedrock underlying the site is classified as a Principal Aquifer. The superficial deposits are classed as unproductive on the Multi-Agency Information for the Countryside (MAGIC)³ website.

3.2.2.2 Source Protection Zones

The site lies within a Zone 3 Total Catchment Source Protection Zone (SPZ).

3.2.3 Hydrology

3.2.3.1 Groundwater Vulnerability

The Groundwater Vulnerability layer on MAGIC map reveals that the site does not lie within an area known for groundwater vulnerability. The site is located within a Surface Water Nitrate Vulnerable Zone.

² British Geological Society, geology viewer map <https://geologyviewer.bgs.ac.uk/> accessed in June 2024

³ Multi-Agency Information for the Countryside – Available at: <http://www.magic.gov.uk>, accessed June 2024



3.2.3.2 Flood Zone

The Flood Map for Planning⁴ confirms that the site lies within a Flood Zone 3, which is defined as having “a high probability of flooding from rivers and the sea”. The site benefits from flood defences to protect against flooding from rivers or the sea.

3.3 Ecology

The following information has been assessed in order to determine the site’s ecological site setting:

- MAGIC website; and
- Envirocheck Report – dated October 2018, included as an Appendix to the Site Condition Report submitted with this EP variation application (416.065261.00001/SCR).

The searches confirmed that there are none of the following within the 1km:

- Sites of Special Scientific Interest (SSSI);
- Ramsar’s;
- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Areas of Natural Beauty;
- Local Nature Reserves;
- National Nature Reserves; and
- National Parks.

There is one SSSI (also designated a SPA, SAC, and Ramsar) within 2km and 10km of the site:

- The Humber Estuary – located 1320m to the south.

There are no further designated sites (or considered sites) within 2km or 10m of the site.

There are no Marine Conservation Zones within 2km of the site.

3.4 Cultural Heritage

A review of MAGIC confirmed that the following receptors were present within a 1km radius of the site:

3.4.1.1 Listed Buildings

There are several listed buildings within 1km of the EP boundary as illustrated on Drawing 003. The closest of these is the ‘James Reckitt Memorial at Reckitt and Colman (Pharmaceutical) Limited’, which lies approximately 140m north east of the EP boundary.

3.4.1.2 Scheduled Monuments

The ‘Hull Castle, South Blockhouse and part of late 17th Century Hull Citadel Fort at Garrison Side’ Scheduled Monument lies approximately 870m south of the site.

⁴ Flood Map for Planning, available at: [Flood risk information for this location - Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/100000/flood-map-for-planning.service.gov.uk), accessed June 2024.



The search on MAGIC confirmed that the following features do not lie within 1km of the site:

- World Heritage Sites;
- Registered Battlefields; and
- Registered Park and Garden.

3.5 Receptors

Local receptors within 500m of the site are recorded in Table 3-2 below, along with natural and cultural receptors within 1km.

Table 3-2 Receptors

Receptor Name	Receptor Type	Direction	Approximate Distance from Permit Boundary (m)
Local Receptors within 500m of the EP boundary, as shown on Drawing 003			
Principal Aquifer	Aquifer	N/A	N/A
Hull Self Storage and Vic Coupland Ltd	Commercial	North	Adjacent
NBM Timber Products Timber Yard	Commercial	West	Adjacent
St Mark Street	Local Transport Network	South	Adjacent
Cycle Path	Local Transport Network	East	Adjacent
Dortek	Commercial	South	10
Open Ground	Open Ground	South west	10
Autoelectric Services	Commercial	South	10
Vallelectric Limited	Commercial	East	25
Professional Washroom Services Northern Ltd	Commercial	East	25
Rydan Design and Interiors	Commercial	East	25
Redcar Street	Residential	South	30
A1165 Cleveland Street	Local Transport Network	North west, west, south west	90



Receptor Name	Receptor Type	Direction	Approximate Distance from Permit Boundary (m)
River Hull	Surface Water Feature	North west, west, south west	200
Dansom Lane	Residential	North	310
Holderness Road	Residential	East	380
Open Ground	Open Ground	North	390
Railway	Local Transport Network	North east	430
Ecological and Cultural Heritage Receptors within 1km of the EP boundary as shown on Drawing 003			
James Reckitt Memorial at Reckitt and Colman (Pharmaceutical) Limited	Listed Building	North east	140
Hull Castle, South Blockhouse and part of late 17 th century Hull Citadel Fort at Garrison Side	Scheduled Monument	South	870
The Humber Estuary	SSI, SPA, SAC, Ramsar	South	1320

3.6 Windrose

Figure 3-1 shows the wind patterns in 2016 as identified by the Humberside meteorological station. The most prominent wind direction is from the south west to the north east. Winds from the north, east, and west are relatively infrequent.



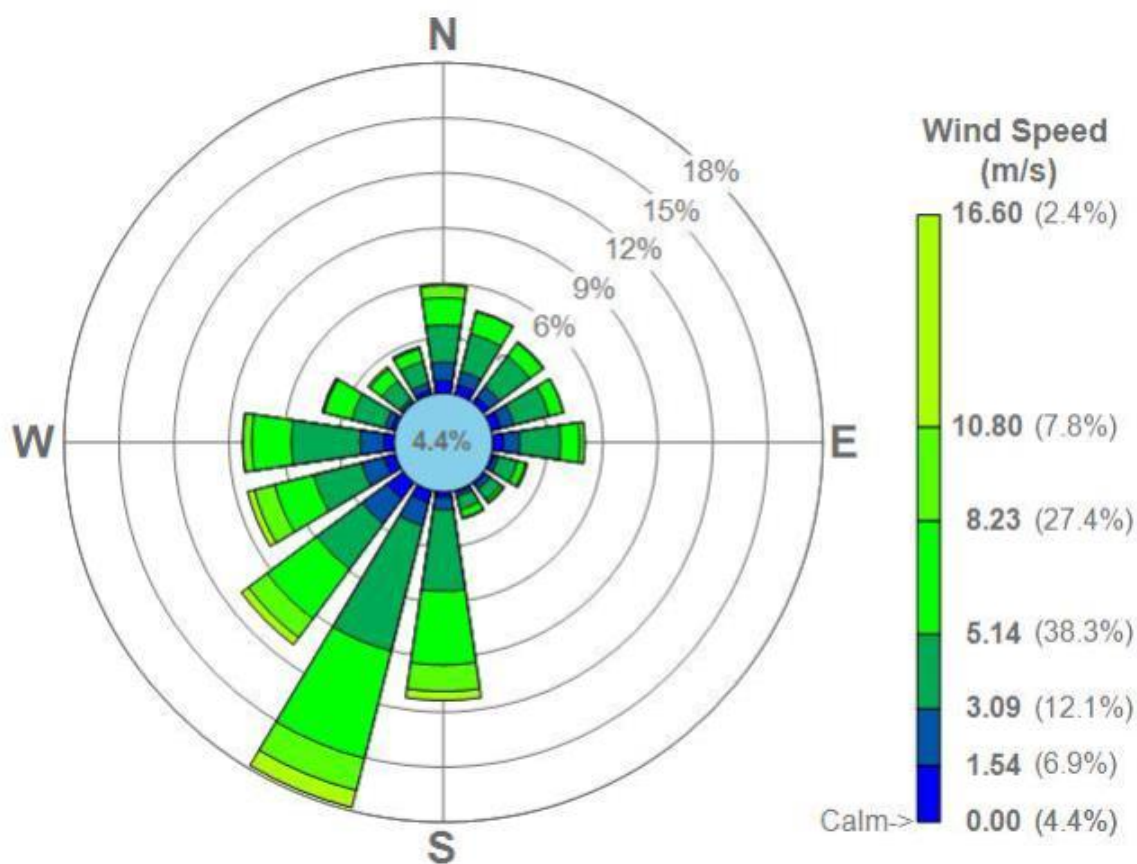


Figure 3-1 Humberside Meteorological Station, 2016



4.0 ENVIRONMENTAL RISK ASSESSMENT

The following tables assess the site in terms of potential hazards posed, receptors and pathways along with management and assessment of the identified risks.

As detailed in Section 1.0, only the risks associated with the proposed EP variation application will be assessed as part of this application.

The probability of exposure is the likelihood of the receptors being exposed to the hazard and is defined as low, medium, or high. These terms are qualified as follows:

- Low: exposure is unlikely, barriers in place to mitigate against exposure.
- Medium: exposure is fairly probable, barriers to exposure less controllable.
- High: exposure is probably, direct exposure likely with few barriers.

The methodology outlined in Section 1.1 of this report is the basis on which it is determined whether the proposed EP variation will lead to significant impact on the surrounding environment. Where a conclusion of 'not significant' has been reached, it is proposed that the mitigation and management measures that will be in place at the site will be sufficient to ensure that there will be no impact at the surrounding environment.

Sections highlighted **bold** have been added to the risk assessment tables as part of this EP variation application.



Table 4-1 Odour Risk Assessment and Management Plan

WHAT DO YOU DO THAT CAN HARM AND WHAT COULD BE HARMED			MANAGING THE RISK	ASSESSING THE RISK		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
<p>Odours associated with:</p> <p>The increase in maximum annual throughput of waste from 150,000 to 250,000 tpa.</p> <p>The increase in the site's maximum waste storage capacity to 1,750 tonnes at any one time.</p> <p>Addition of EWC codes.</p>	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>	Air	<p>The proposed increase to the maximum annual throughput and the maximum waste storage capacity is not considered likely to significantly increase the risk of odour emissions as there is no change proposed to the existing permitted activities.</p> <p>The proposed additional EWC codes (19 12 04, 15 01 02, 15 01 06) are similar in nature to those already accepted on site for the production of RDF and are therefore not likely to significantly increase the risk of odour emissions.</p> <p>The additional EWC code 17 09 04, for the acceptance of Astro Turf, is not biodegradable or odorous in nature. Astro Turf will not undergo any treatment on site, and will be accepted, wrapped and removed from site for further processing and recovery.</p> <p>Existing odour management measures are therefore considered to be effective, and will continue to be implemented, in accordance with the site's Odour Management Plan (OMP).</p> <p>Odour mitigation and management measures as detailed in the OMP are summarised as follows:</p> <ul style="list-style-type: none"> • The baled RDF material will be double wrapped, and sealed in plastic wrapping to prevent odour release; • From operator experience to date, the treatment of waste to produce RDF bales, and subsequent storage of RDF bales on site has not generated significant odours; • Strict Waste Acceptance Procedures will continue to be adhered to, to ensure that only permitted waste types are accepted on site; • All waste treatment activities will continue to take place within the main waste processing building, which uses a combination of fast action doors and process air ventilation to prevent the fugitive release of odorous air. The air within the building is managed through extraction into the odour abatement system prior to release; 	Low	Odour Nuisance and loss of amenity.	Low



WHAT DO YOU DO THAT CAN HARM AND WHAT COULD BE HARMED			MANAGING THE RISK	ASSESSING THE RISK		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
			<ul style="list-style-type: none"> • During the working day, the fast action doors to the building open and close to facilitate the entry/exit of waste collection vehicles. In this way, negative pressure is maintained within the building and odours are treated prior to emission release; • The air within the building is managed through extraction via a dedicated odour abatement and extraction system. Internal air from the reception hall is ducted externally to a carbon bed filter system to be located on the eastern façade of the building. The odour abatement system comprises a filter system to draw air and any odours into the building when the doors are opened to accept delivery / export vehicles. The extraction system and odour control technology provider is Camfil, who designed the system to achieve 3 air changes per hour (acph). Odour is discharged post abatement with a performance guarantee of 600ouE/m3; • Once received and processed, any waste material to be stored on site will not exceed a maximum 72 hours. Baled waste is stored for a maximum of 7 days; • Bays are cleaned down regularly to avoid older materials building up and degrading and potentially releasing odours; and • All vehicles exiting the facility will be closed or covered. <p>Further mitigation and management measures are detailed within the OMP.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the OMP (Ref: 416.065261.00001/OMP).</p>			



Table 4-2 Noise Risk Assessment and Management Plan



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE



<p>Noise associated with:</p> <p>The increase in maximum annual throughput of waste from 150,000 to 250,000 tpa.</p> <p>The increase in the site's maximum waste storage capacity to 1,750 tonnes at any one time.</p> <p>Addition of EWC codes.</p>	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>	<p>Air</p>	<p>The site is located within a primarily commercial/industrial setting with a limited number of potentially noise sensitive receptors.</p> <p>The proposed increase to the maximum annual throughput and the maximum waste storage capacity is not considered likely to increase generation of noise from the site as there is no change proposed to the existing permitted activities. Similarly, the storage of processed RDF bales in external stand trailers is unlikely to increase noise emissions.</p> <p>A Noise Risk Assessment was prepared in support of the site's planning permission. The assessment concluded that operational noise from the site would have a 'low' risk of adverse impact on residential receptors. It was also highlighted, that due to the location of the site being in close proximity to several other industrial and commercial sites (which contribute significantly to the existing noise environment) it was concluded that the operations at the facility would not be significantly different to the current soundscape.</p> <p>A Noise and Vibration Management Plan was prepared in support of the original EP application. As the proposed EP variation application is not considered to increase the generation of noise from the site, the existing noise management measures are considered to be effective and there is no change proposed to noise management measures. The site's noise management measures are described as follows:</p> <ul style="list-style-type: none"> • Site operations will continue to be restricted to hours specified in the planning consent; • Speed limits are implemented for vehicles using the site. Traffic calming measures are implemented to enforce speed limits; • The waste processing building benefits from roller shutter doors, which are kept closed at all times unless a delivery is taking place; • Site access & haul roads and operational areas will continue to be maintained and repaired to minimise emissions of noise due to uneven and poor surfacing; • If horns or alarms are deemed to cause unacceptably high levels of noise, alternative technologies will be explored and implemented; • Plant will be selected & operated to minimise noise. Plant is fitted with noise silencers where possible; • All site plant and machinery is operated and maintained in accordance with manufacturer's specifications; and • Auditory inspections are carried out daily & in response to complaints. 	<p>Low</p>	<p>Noise disturbance and loss of amenity.</p>	<p>Low</p>
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What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
			The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).			

Table 4-3 Fugitive Emissions Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
To Air:						
Dust from: The increase in maximum annual throughput of waste from 150,000 to 250,000 tpa. The increase in the site's maximum waste storage capacity to 1,750	Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space. Ecological receptors including the Humber	Air	Dusty wastes will continue to not be accepted on site. Existing dust management measures are considered to be effective and will continue to be implemented on site. Dust mitigation and management measures implemented on site are summarised as follows: <ul style="list-style-type: none"> All waste processing activities will continue to be undertaken within the waste processing building. The building benefits from roller action doors which will continue to be kept closed when deliveries of waste are not taking place; The baled RDF material will be double wrapped, and sealed in plastic wrapping to prevent dust emissions; 	Negligible.	Nuisance and harm to human health	Negligible



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
tonnes at any one time. Addition of EWC codes.	Estuary SAC, SSSI, SPA, and Ramsar. See Drawing 003, Environmental Site Setting.		<ul style="list-style-type: none"> A speed limit will continue to be implemented on site to minimise the mobilisation of dust particles; All vehicles will continue to be subject to a programme of planned preventative maintenance and maintained in accordance with the manufacturers recommendations; Drop heights are minimised to prevent emissions of dust; Site surfacing is maintained in good condition to minimise the mobilisation of dust particles; Site operatives carry out ongoing visual monitoring throughout working day to identify unacceptable dust levels; and The site is subject to periodic clean downs to minimise the build-up of dusty particles. <p>Visual monitoring is carried out by all members of the staff throughout their shift and any potential emissions of dust reported to the Site Manager.</p> <p>If dust becomes an issue, or complaints are received, an investigation to establish the cause will be undertaken and action taken accordingly, e.g. if the problem is caused by a particular waste type, cease accepting that waste until a suitable method statement detailing how the waste is handled, has been prepared and implemented.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).</p>			
To Water:						
Runoff from the site	Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial,	Land	The proposed changes included as part of this EP variation application do not change the existing arrangements for the management of runoff from site.	Low	Contamination	Very Low



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
	<p>local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p> <p>Groundwater.</p>		<p>All waste storage and treatment activities will continue to take place on impermeable surfacing with a sealed drainage system within the main building.</p> <p>Any clean down water from the waste processing building is contained to ensure it does not enter the surface water drainage system in the yard area.</p> <p>The yard area benefits from a mixture of permeable and impermeable surfacing (as illustrated on Drawing 002), enclosed by kerbing on the boundary where impermeable surfacing meets permeable surfacing.</p> <p>All runoff collected within the fully contained area drains to a central point in the yard, where via underground pipework, runoff will flow to an interceptor, before transferring to a surface water flow control box (to regulate the release of surface water to sewer). A penstock isolation valve is located at the release point to sewer, which is closed by site operatives if required.</p> <p>The site discharges foul water to sewer. A penstock isolation valve is installed at the release point to sewer, which will be closed by site operatives in the event of a fire or spillage ensuring no escape of firewater/pollution from the site.</p> <p>Strict Waste Acceptance Procedures are in place and will continue to be implemented to ensure that only approved waste materials are accepted on site.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (416.065261.00001/BATOT).</p>			
Pests						
Birds, pests and insects.	Sensitive receptors listed in Table 3-2 including residential	Land, Water and Air	From operator experience to date, the treatment of waste to produce RDF bales, and subsequent storage of RDF bales on site has not attracted pests.	Low	Nuisance, potential risk to health	Negligible



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
	<p>properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>		<p>All waste processing will continue to be undertaken within the building. Waste is typically treated on the day of arrival, or within 72 hours, limiting the time for the development of infestations.</p> <p>Waste acceptance procedures will continue to ensure that only authorised waste types are accepted on site.</p> <p>A specialist contractor is employed by the site to provide preventative measures.</p> <p>The site is inspected on a daily basis for signs of pest infestations.</p> <p>If an infestation becomes an issue, or complaints are received, an investigation to establish the cause will be undertaken and action taken accordingly, e.g. if the problem is caused by a particular waste type, cease accepting that waste until a suitable method statement detailing how the waste is handled, has been prepared and implemented.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT) and the existing Pest Management Plan (Ref: 419.08678.00001/PMP).</p>			
Mud/Litter						
Litter from waste	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber</p>	Air	<p>Existing litter management measures are considered to be effective and will continue to be implemented on site.</p> <p>Litter mitigation and management measures implemented on site are summarised as follows:</p> <ul style="list-style-type: none"> The baled RDF material will be double wrapped, and sealed in plastic wrapping to prevent the release of litter; The stand trailers will provide storage for a maximum of 7 days, prior to removal from site, however the trailers will typically be removed from site on a daily basis, and replaced with an empty 	Low	Nuisance from litter. Dangerous conditions on roads.	Negligible



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
	<p>Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>		<p>clean container. They will be monitored using the site's CCTV system, and through regular visual inspection by site operatives;</p> <ul style="list-style-type: none"> To minimise the generation of litter, the stand trailers will be sealed by closing the curtains and doors, at all times unless waste is being loaded/unloaded; Waste acceptance procedures will continue to ensure that only authorised wastes are accepted on site; All wastes with the potential to generate litter are accepted, and treated within the confines of the waste processing building which benefits from roller shutter doors; Vehicles are sheeted or enclosed when arriving and departing the site; All yard areas, and the waste processing building are swept clean on a daily basis and any spilt waste deliveries will be removed; and Bins are provided on site around welfare areas for the use of site visitors and personnel. <p>The site and its immediate surroundings are inspected daily and actions are taken to maintain the area free of significant accumulations of litter and debris.</p> <p>Any excessive litter material at the facility or on the highways will be cleared using a mechanical sweeper and/or litter picker if required.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).</p>			
Mud from vehicle movements	Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial,	Land	<ul style="list-style-type: none"> The site benefits from good housekeeping and all areas of the site are cleaned on a daily basis; The yard and waste processing building benefits from concrete surfacing limiting the build up of mud and debris; 	Low	Nuisance from mud. Dangerous conditions on roads.	Negligible



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
	<p>local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>		<ul style="list-style-type: none"> All vehicles leaving operational areas are checked to ensure they are clear of loose waste; Before leaving the site, vehicles are cleaned as necessary and checked to ensure their load is secure; and Daily visual inspection of the site by site management is undertaken to ensure any problem with mud is identified. Any issues will be cleaned up as soon as possible, with necessary road cleaning equipment deployed if required. <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).</p>			



Table 4-4 Accidents Risk Assessment and Management Plan

What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
Spillage and Leakage	Local surface water features including rivers, streams and drains. Groundwater.	Runoff and percolation through ground	<p>Existing management measures are considered effective and will continue to be implemented on site.</p> <p>All areas of the site used for waste storage benefit from impermeable surfacing, and have the capability to contain any spillages or leaks. Only empty, spare stand trailers will be stored on permeable surfacing within the designated area as shown on Drawing 002. The stand trailers for external RDF bale storage will be plastic lined.</p> <p>The stand trailers will be sealed by closing the curtains and doors. The doors, and curtains will be kept closed at all times unless a delivery is taking place.</p> <p>The yard area is enclosed by kerbing. All runoff collected within this fully contained area drains to a central point in the yard, where via underground pipework, runoff will flow to an interceptor, before transferring to a surface water flow control box (to regulate the release of surface water to sewer). A penstock isolation valve is located at the release point to sewer, which is closed by site operatives if required.</p> <p>The site discharges foul water to sewer. A penstock isolation valve is installed at the release point to sewer, which will be closed by site operatives in the event of a fire or spillage ensuring no escape of firewater/pollution from the site.</p> <p>Tanks used for the storage of fuel and maintenance oil, are constructed so that any leaks/spillages will be contained.</p> <p>Tanks are surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest tank within the bund or 25% of the total tank volume within the bund, whichever is the greater.</p> <p>Storage tanks are constructed to the appropriate British Standard.</p> <p>Tanks are inspected visually on a daily basis by the site staff to ensure the continued integrity of the tanks and identify the requirement for any remedial action.</p>	Low	Contamination of surroundings	Low



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
HAZARD	RECEPTOR	PATHWAY	RISK MANAGEMENT	PROBABILITY OF EXPOSURE	CONSEQUENCES	WHAT IS THE OVERALL RISK
WHAT HAS THE POTENTIAL TO CAUSE HARM?	WHAT IS AT RISK/WHAT DO I WISH TO PROTECT?	HOW CAN THE HAZARD GET TO THE RECEPTOR?	WHAT MEASURES WILL YOU TAKE TO REDUCE THE RISK? WHO IS RESPONSIBLE FOR WHAT?	HOW LIKELY IS THE CONTACT?	WHAT IS THE HARM THAT CAN BE CAUSED?	WHAT IS THE RISK THAT STILL REMAINS? THE BALANCE OF PROBABILITY AND CONSEQUENCE
			<p>Materials suitable for absorbing and containing minor spillages are maintained on site. Minor spillages will be cleaned up immediately, using sand or proprietary absorbent to clean up liquids and placed in alternative containers.</p> <p>Site staff undertake daily monitoring for evidence of spillage and leakage.</p> <p>In the event of a major spillage immediate action will be taken to contain the spillage and prevent liquid from entering surface water drains and the unsurfaced ground. The spillage will be cleared immediately and placed in containers for off-site disposal and the EA will be notified.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).</p>			
Unauthorised waste	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>	Air, land	<p>The proposed EP variation is not considered to increase the risk of unauthorised waste acceptance as there is no change proposed to existing permitted waste activities.</p> <p>The proposed additional EWC codes will be subject to the site's existing strict waste acceptance procedures.</p> <p>Existing management measures are considered to be effective, and will continue to be implemented on site as described below:</p> <ul style="list-style-type: none"> Waste will continue to be subject to strict waste acceptance procedures, to identify, reject and/or segregate potentially non-conforming waste; All waste will continue to be subject to visual inspection and checking against the declaration on the waste transfer note; In the event that unauthorised waste is delivered to the site, the waste will be segregated and stored in a designated quarantine area as illustrated on Drawing 002, prior to export from site to an alternative suitably permitted facility; and Only waste authorised by the EP is accepted at the site. 	Low	<p>Odour nuisance</p> <p>Water contamination</p> <p>Harm to human health</p>	Low



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
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			The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT)			
Fire	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar.</p> <p>See Drawing 003, Environmental Site Setting.</p>	<p>Air (smoke)</p> <p>Ground (spillages and firewater)</p>	<p>The site's FPP has been updated to reflect the increase in the site's maximum annual throughput, the maximum waste storage capacity, the storage of processed RDF bales externally in stand trailers, and the additional proposed EWC codes.</p> <p>The site will be managed in accordance with the updated approved FPP (Ref: 416.065261.00001/FPP).</p>	Medium	Harm to human health, harm to operations, pollution of surroundings.	Not significant – due to the mitigation and management methods outlined in the FPP.
Flooding	<p>Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space.</p> <p>Ecological receptors including the Humber</p>	Flood waters over land	<p>The proposed EP variation is not considered to increase the risk of flooding on the site. Existing risk management measures are considered adequate and will continue to be implemented as described below.</p> <p>The site lies within a flood zone 3, and benefits from flood defences to significantly reduce the possibility of flooding.</p> <p>Evacuation procedures will be implemented in the event of flooding.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in accordance with the BATOT document (Ref: 416.065261.00001/BATOT)</p>	Low	Contaminated flood waters impacting land in residential, ecological and commercial areas.	Not significant



What Do You Do That Can Harm and What Could Be Harmed			Managing The Risk	Assessing The Risk		
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	Estuary SAC, SSSI, SPA, and Ramsar. See Drawing 003, Environmental Site Setting.					
Security and Vandalism	Sensitive receptors listed in Table 3-2 including residential properties, commercial/industrial, local cycle path, and open space. Ecological receptors including the Humber Estuary SAC, SSSI, SPA, and Ramsar. See Drawing 003, Environmental Site Setting.	Land and air	Security on site includes: <ul style="list-style-type: none"> Perimeter fencing with a gated entrance which is locked if appropriate (outside of operational hours); Full CCTV coverage of all internal and external areas; Monitored alarm system for the waste processing building; Lockable doors on the processing building and office/welfare facilities; Inspection and maintenance procedures; Visitor sign in system; and Gates which are locked outside of operational hours. <p>All mobile plant is stored inside the waste processing building overnight. Security infrastructure is inspected daily by the operations staff to identify deterioration and the need for any repairs.</p> <p>In the event that damage is identified, unauthorised access will be prevented and temporary repairs will be made by the end of the working day. Permanent repairs will be made as soon as practicable.</p> <p>All visitors to the site are required to register in the visitor's book and sign out again on exit. This minimises the risk of unauthorised visitors being present at the site.</p> <p>The Site Manager will continue to be responsible for implementing risk management measures in conjunction with the BATOT document (Ref: 416.065261.00001/BATOT).</p>	Low	Theft, plant failure, harm to human health	Low



5.0 CONCLUSION

This ERA has been undertaken as described by the EA regulatory guidance. The assessment is provided as part of an EP variation application for the Geminor (UK) MRF, on St Mark Street, Hull.

This qualitative risk assessment, in addition to the specific impact assessments and management plans, has considered odour, noise, fugitive emissions, dust, releases to water, litter, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described above, and in the separate management plans potential hazards from the proposed EP variation are not likely to be significant and no further assessment is required.



