

Wakerley Inert Landfill

Environmental Permit Application

Environmental Risk Assessment

December 2019

Prepared on behalf of Mick George Limited





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1.0 Introduction

1.1 Report Context

- 1.1.1 This section of the Environmental Permit application corresponds to Section 6 of Part B2 of the Environmental Permit application forms, and has been prepared on behalf of the operator, Mick George Limited (Mick George) by WYG.
- 1.1.2 Mick George seeks to gain a bespoke Environmental Permit to allow the deposit of waste to land at Wakerley Quarry to facilitate the restoration scheme (Drawing Number W4 18 02) as presented in the current planning application submitted by Mick George to Northamptonshire CC (Reference Number 19/00060/WASFUL).
- 1.1.3 This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risk to the environment and human health specifically related to the proposed activity. This report will identify any significant risk and demonstrate that the risk of pollution will be acceptable by taking the appropriate measures to manage the risk.



2.0 Environmental Risk Assessment

2.1 Methodology

- 2.1.1 This report has been prepared in accordance with the Environment Agency's Risk Assessment guidance. It specifically relates to the potential risk associated with the following risk types:-
 - Odour;
 - Noise and vibration;
 - · Fugitive emissions; and
 - Accidents and incidents.
- 2.1.2 This risk assessment addresses the above, and is based on the following methodology:-
 - Identification of potential sources of risk;
 - Identification of all potential receptors to risk; and
 - Risk assessment of each risk type.
- 2.1.3 The ERA is a tool used to identify the pollutant linkage i.e. source -pathway-receptor. For most risks, the atmosphere is the main pathway and will always exist. Therefore, the ERA deals primarily with the sources and receptors. The ERA provided in Appendix A is summarised below.

2.2 Sources

2.2.1 The potential sources of risks have been considered for each risk type, as shown in Appendix A. The sources of risk for this application have been identified as:-

Noise

- Plant and machinery;
- Vehicle movements to/from the site;
- · Vehicle movements within the site; and
- Engineering works.



Fugitive emissions

- Odour;
- Particulate matter (dust);
- Mud and litter; and
- Scavenging birds, pests and vermin.

Accidents

- Leaks/spillages;
- Fire or failure to contain firewater;
- Flooding; and
- Vandalism

2.3 Pathways

2.3.1 The pathways have been identified for each risk type as shown below in Table 1:

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Atmosphere
Noise	Atmosphere
Fugitive emissions	Atmosphere
	Atmosphere
Accidents	Surface water run-off
Accidents	Infiltration
	Percolation

2.4 Receptors

- 2.4.1 Receptors within 1km of the proposed application boundary, are shown on Drawing Number MGL/A099077/REC/01. The main pathway for the identified sources will be the atmosphere and as such, atmospheric conditions can affect dispersion rates and hence potential risk. As a result, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 2.
- 2.4.2 As part of this process, a Nature and Heritage Conservation Screen (reference number



EPR/HB3300HY/A001) was requested was requested from the Environment Agency. The results of the screen (Appendix B) identified the following:-

- 3 Local Wildlife Sites (LWS) within 200m of the application site;
- 2 ancient woodlands within 200m of the application site;
- 2 protected habitats within 500m of the application site; and
- Areas within 500m of the application site that comprise protected species such as the European eel.
- 2.4.3 These sites have been included in Table 2 below and the ERA in Appendix A. Furthermore, as part of the planning application (reference 08/00026/MIN), an Ecological Assessment was undertaken to assess the ecological and nature conservation impacts of the proposed activities at Wakerley Quarry. The results of the assessment concluded that the risk of the proposed activities to impact habitats, species and statutory and non-statutory sites are not significant. A copy of the Ecological Assessment is provided as Appendix C.

Table 2: Sensitive Receptors Located within 1km of the Proposed Waste Operation

ID	Receptor	Direction from Operational Area	Minimum Distances from the Permit Application Boundary (approx. m)
Des	ignated ecological habitats e.g. Ramsar, SA	C, SPA, SSSI, LNR	
1	Wakerley Spinney (SSSI)	E	750
2	Wakerley Woods (LWS)	E	Adjacent
3	Short Wood Harringworth (LWS)	SW	Adjacent
4	Long Wood (LWS)	S	Adjacent
5	Wakerley Great Wood Road Verge (LWS)	E	Adjacent
6	Unnamed LWS	N	900
Don	nestic Dwellings		
7	Residential dwellings on Main Street, Wakerley	N	725
8	Town Wood Farm	S	775
9	Cedar House	S	780
10	The Cottage	S	910
Con	nmercial and Industrial Premises		
N/A			
Hig	hways or Minor Roads		
11	Wakerley Road	N	330
12	Access Road off Main Street, Wakerley	NE	495
Prio	rity Habitats		
13	Priority Habitat Inventory – Deciduous Woodland (Greenwood Sale)	S	Adjacent
14	Priority Habitat Inventory – Deciduous Woodland (Wood Hollow)	S	215



15	Priority Habitat Inventory – Deciduous	S	505
	Woodland (Town Wood)		
16	Priority Habitat Inventory – Deciduous	SE	825
10	Woodland (Laxton Wood)	ry – Deciduous ry – Deciduous ry – Deciduous railway) ry – Deciduous ry – Deciduous	623
17	Priority Habitat Inventory – Deciduous	_	740
17	Woodland (Wakerley Spinney)		740
18	Priority Habitat Inventory – Deciduous	N	925
10	Woodland (Dismantled railway)	IN	925
19	Priority Habitat Inventory – Deciduous	CE	885
19	ority Habitat Inventory – Deciduous sodland (Gaussen Bushes) cient Woodland (Wakerley Spinney) E	003	
20	Ancient Woodland (Wakerley Spinney)	E	Adjacent
21	Unnamed ancient woodland	E	Adjacent
22	Lowland Calcareous Grassland	E,N	Within 500
23	Coastal and Floodplain Grazing Marsh	E, N	Within 500
Prot	tected Species		
24	River Welland – Migratory Route	N	850
25	Area of protected fish species (River Welland)	N	930
Surf	face Water e.g. rivers and streams		
26	River Welland	N	850
Gro	undwater		

According to the Multi-Agency Geographic Information for the Countryside's (MAGIC) website, the site is not located within a Groundwater Source Protection Zone. With regards to aquifers, the MAGIC website shows that the majority of the site overlies a Principal aquifer with an area located to the south east that comprises a Secondary B aquifer.

2.5 Risk Assessment

- 2.5.1 The ERA (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on the receptors. This is achieved by fulfilling the following objectives:-
 - Identify the location and nature of each hazard;
 - Identify the specific receptors potentially at risk and assess the sensitivity of each receptor;
 - Provide a qualitative assessment of the risk posed to each sensitive receptor;
 - Identify management and monitoring techniques; and
 - Provide recommendations for more detailed assessments where necessary.

2.6 Summary of ERA

2.6.1 The ERA (Appendix A) indicates that the proposed inert landfill will have no significant impacts in terms of odour, noise and vibration, and fugitive emissions, and the likelihood of accidents is minimal.



Drawings

MGL/A099077/REC/01 - Receptor Plan

W4-18-01 - Site Location and Phasing Sequence Plan

W4 18 02 - Landscape Restoration Masterplan



Appendices



Appendix A – Amenity and Accident Risk Assessment



Table A1: 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	Consequence	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? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Receipt and storage of odorous wastes	Occupiers of domestic dwellings listed in Table 2 above.	Atmosphere	The proposed waste types are not putrescible and therefore will not biodegrade to produce offensive odours. There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. Details of the waste acceptance procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application). All site operatives will be vigilant regarding the identification of non-compliant wastes and any non-conformances or odour issues will be reported to the Site Manager.	Unlikely due to the nature of the proposed waste types and the measures in place.	Odour annoyance	Not significant due to management techniques employed.



Table A2: Noise and Vibration 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	Consequence	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? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.	
Vehicle movements on site.	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2. Wakerley Spinney (SSSI)	Atmosphere	Loads will only be delivered to the site during the hours stipulated (07:00 – 18:00 Monday – Friday and 07:00-13:00 on Saturdays) in the planning permission. The delivery of waste will take place in a controlled manner to keep noise/vibration to a minimum. As detailed on the Phasing Plan (Drawing Number W4-18-01) a series of bunds will be placed along the perimeter of the working phases using topsoil and overburden soils. In addition, the access road will be sunk below ground level and will be screened by bunds and hedgerows. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. All equipment and vehicles when not in regular use shall be switched off. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.	



Noise from reverse vehicle warnings	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2. Wakerley Spinney (SSSI)	Atmosphere	Loads will only be delivered to the site during the hours stipulated (07:00 – 18:00 Monday – Friday and 07:00-13:00 on Saturdays) in the planning permission. Utilisation of low level warning signals. As detailed on the Phasing Plan (Drawing Number W4-18-01) a series of bunds will be placed along the perimeter of the working phases using topsoil and overburden soils. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.
Noise and vibration from loading and unloading of wastes.	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2. Wakerley Spinney (SSSI)	Atmosphere	Loads will only be delivered to the site during the hours stipulated (07:00 – 18:00 Monday – Friday and 07:00-13:00 on Saturdays) in the planning permission. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. Vehicles to pull away from tipped loads slowly to reduce tailgate slamming. The loading/unloading of wastes will be undertaken in a controlled manner to keep noise/vibration to a minimum. Vehicles will be directed by site operatives to minimise the drop height when depositing loads at the site. As detailed on the Phasing Plan (Drawing Number W4-18-01) a series of bunds will be placed along the perimeter of the working phases using topsoil and overburden soils. This will	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.



			minimise the potential for noise to impact receptors that are situated beyond the site boundary. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.			
Noise and vibrations from engineering works	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats listed in Table 2. Wakerley Spinney (SSSI)	Atmosphere	Loads will only be delivered to the site during the hours stipulated (07:00 – 18:00 Monday – Friday and 07:00-13:00 on Saturdays) in the planning permission. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. All plant and equipment will be switched off when not in regular use. As detailed on the Phasing Plan (Drawing Number W4-18-01) a series of bunds will be placed along the perimeter of the working phases using topsoil and overburden soils. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.



Table A3 – Fugitive Emissions Risk Assessment and Management Plan

What do you d	hat do you do that can harm and what could be harmed?		Managing the risk	Assessing the risk		sk
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	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? If it occurs – who is responsible for what?	How likely is this 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 haul roads.	Occupiers of domestic dwellings listed in Table 2 above. Surrounding agricultural land Priority Habitats listed in Table 2. Wakerley Spinney (SSSI)	Atmosphere	Any waste vehicles or haul roads that gather significant amounts of dust will be dampened or washed as and when necessary. The site will also be subject to the use of a water bowser which will be implemented as necessary to suppress any dust left on the hardstanding due to vehicle movements. The vehicle cleaning facilities will be checked on a monthly basis and any necessary repair work will be carried out as soon as practicable. In the event of a breakdown, additional road cleaning equipment will be provided. If necessary, a road sweeper will be contracted to clean the access road and the A43 where vehicles exit the site. Wastes being delivered to the site will be covered or sheeted to prevent the generation of dust while the waste is in transit. Vehicle speeds will be limited on site and access road to prevent re-suspension and entrainment of dust. The Site Manager will undertake a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.	Dust could potentially reach the nearby dwellings when a strong wind blows in their direction. Management actions should prevent this happening.	Local nuisance – dust on cars, clothing, vegetation, etc. Smothering. Nutrient enrichment.	Not significant due to management techniques employed.
Dust emissions generated	Occupiers of domestic	Atmosphere	A water bowser will be used to dampen site roads and stockpiles if deemed necessary.	Dust could potentially reach	Local nuisance – dust on cars,	Not significant due to management



during unloading of inert waste from tipping lorries.	dwellings listed in Table 2 above. Surrounding agricultural land Wakerley Spinney (SSSI)		The loading/unloading of wastes will be undertaken in a controlled manner to keep dust emissions to a minimum. Extra care will be taken with the deposit of waste during periods of prolonged dry weather or high winds. The Site Manager will undertake a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.	the nearby dwellings when a strong wind blows in their direction. Management actions should prevent this happening.	clothing, vegetation, etc. Smothering. Nutrient enrichment.	techniques employed.
To Water	,	,		_	•	
Contaminated rainwater run-off.	Groundwater Surface water features listed in Table 2 above.	Direct surface water run-off from site. Infiltration. Percolation.	The proposed waste types are inert and therefore non-hazardous. As such, any run off that is generated on site will simply be rainwater which has passed through inert soils and therefore is not likely to be hazardous. There will be strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of these procedures are detailed in the Operating Techniques (Appendix B of the Environmental Permit Application).	Unlikely due to the nature of the proposed wastes types and the measures in place.	Contamination of surface water bodies and groundwater.	Not significant due to management techniques employed and the inert nature of the waste types.
Pests/Scavengi	ng birds				-	
Birds and pests.	Occupiers of domestic dwellings listed in Table 2 above. Priority Habitats identified in Table 2. Surrounding agricultural land Wakerley Spinney (SSSI)	Air. Ground.	The proposed waste types are not putrescible and will not attract pests, vermin and/or scavenging birds. Strict waste acceptance procedures will be in place to ensure only permitted waste types are accepted. Details of these procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application). The Site Manager will undertake regular reviews of pests and scavenging birds at the site. All site operatives will be vigilant and report any problems to the Site Manager.	Very unlikely.	Nuisance to local residents. Predation of species in Priority Habitats and designated ecological habitats.	Not significant due to management techniques employed and the inert nature of the waste types.



Mud/Litter	Mud/Litter							
Mud arising from vehicles movements	Highways identified in Table 2.	Tracked by vehicles.	The site will comprise vehicle cleaning facilities that will be used by HGVs before they leave the site. The amount of mud on local roads will monitored daily by site operatives. In the event that mud is deposited on the access road and/or highway then a road sweeper will be employed if necessary.	Unlikely due to measures in place.	Mud on roads is unsightly and can increase the risk of road traffic incidents.	Not significant due to management techniques employed.		
Litter arising from vehicle movements and high winds.	All receptors identified in Table 2.	Air Tracked by vehicles.	Due to the nature of the proposed waste types, litter will not be generated at the site. The proposed waste types are not considered to represent a significant risk of litter. Strict waste acceptance procedures will be in place to ensure only permitted waste types are accepted. Details of these procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application). A vigilant watch for litter will be undertaken by site operatives. In the unlikely event that litter is generated by the activity, the Site Supervisor will implement a litter collection as necessary.	Very unlikely due to measures in place.	Local nuisance.	Not significant due to the inert nature of waste received and management techniques employed.		



Table A4 – Accident 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	Consequence	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? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Fire or failure to contain firewater.	Groundwater. Surface water bodies identified in Table 2. Priority Habitats identified in Table 2. Occupiers of domestic dwellings listed in Table 2. Surrounding agricultural land Wakerley Spinney (SSSI)	Infiltration. Contaminated rainwater runoff.	The risk of fire is considered to be low as the proposed waste types are not flammable. There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted which may be combustible in nature. Details of the waste acceptance procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application). The operator will undertake routine maintenance of all equipment in accordance with the manufacturer's guidance. This will minimise the risk of mechanical failure which may result in an increased risk of combustion. Site notices and training will be undertaken regarding fire hazards. The Site Manager will be responsible for actions undertaken in the event of a fire.	Very unlikely due to the nature of the waste types and the measures in place.	Contamination of local groundwater and/or surface water. Local nuisance from smoke.	Not significant due to the inert nature of waste types and likelihood of a fire on site.
Leaks/spillages of fuel/oil.	Groundwater. Surface waters identified in Table 2.	Surface run-off. Infiltration. Percolation	The operator will undertake regular maintenance of plant and equipment in accordance with the manufacturer's guidance. This will minimise the risk of mechanical failure which may result in leaks.	Unlikely due to measures in place.	Contamination of land and watercourses.	Not significant due to management techniques employed.



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			All fuel, oil and lubricants will be contained within appropriate 110% bunded tanks. The tanks will be maintained and inspected in accordance with the manufacturer's recommendations.			
			Daily vehicle/plant checks will be undertaken to ensure any fuel/oil leaks etc. are repaired as soon as possible.			
			The Site Manager will be responsible for ensuring effective remediation and documenting any incident.			
Flooding.	Groundwater. Surface water bodies identified in Table 2.	Infiltration. Contaminated surface water runoff.	Drainage from the site occurs to two local surface water catchments, the River Welland to the north and to Fineshade Brook, a tributary of the River Welland, to the south. The surface water divide between the two catchments crosses the centre of the site from west to east and this will remain after site restoration. In terms of the northern catchment, the current risk of flooding is considered to be low due to the presence of drainage ditches that are situated along the perimeter of the site. As part of the restoration scheme, it is proposed that these ditches will be retained in order to manage surface water run off.	Unlikely due to measures in place.	Disruption to works on site. Contamination of local groundwater and/or surface water. Contamination of local agricultural land.	Not significant due to the management techniques employed.
			In addition, as detailed on the restoration scheme (Drawing Number W4 18 02), attenuation ponds and wetlands will be constructed along the northern boundary. Given that the northern catchment drains northwards towards the River Welland, it is envisaged that any surface water run off from			



			this catchment will drain towards the ponds and wetland areas before discharging to the existing ditches. The southern catchment drains southwards and eastwards to tributaries of Fineshade Brook. As such, ponds and wetlands will be constructed along the southern boundary (as shown on Drawing Number W4 18 02) in order to attenuate any surface water run off that is generated in this catchment. Discharge from the attenuation pond and wetland will occur at an off-site drainage ditch that is situated in the woodland to the east of the site (Wakerley Great Wood). The restored landform will be similar to the pre-development profile. As such, in light of the measures detailed above, it is considered that there is no increased risk to flooding as a result of this application. In addition, the proposed waste types are inert in nature and therefore the risk of contamination from flooding is considered to be low. Strict waste acceptance procedures will be in place to ensure only permitted waste types are accepted. Details of these procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application).			
Vandalism (i.e. resulting in damage to site infrastructure or equipment).	Groundwater. Surface water bodies identified in Table 2.	Unauthorised entry to the site.	Permit Application). The site has security fencing where required and site entrances are protected by lockable gates, which are kept locked outside of operating hours.	Unlikely due to measures in place.	Release of polluting materials to air (smokes or fumes) water or land.	Not significant due to management techniques employed.



Priority Habitats identified in	The security fencing and gates will be inspected on a regular basis. Any identified	
Table 2.	damage to the fence or gates that could	
Occupiers of domestic dwellings listed in Table 2.	compromise the site security will be recorded and temporarily repaired as necessary before the end of that working day. Permanent repair or replacement will be undertaken as soon as practicable.	
Surrounding agricultural land	There will be procedures in place which will require all visitors to the site to sign in on arrival and sign out on departure.	
Wakerley Spinney (SSSI)		



Appendix B – Nature and Heritage Conservation Screen Results



Appendix C – Ecological Assessment