



Datchet Quarry

Environmental Permit Application

Environmental Risk Assessment

May 2019

Prepared on behalf of CEMEX Materials UK 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 form, and has been prepared on behalf of the Operator, CEMEX Materials UK Limited (CEMEX), by WYG.
- 1.1.2 The Royal Borough Windsor and Maidenhead has granted Planning Permission for the importation of suitable inert material in order to achieve the restoration scheme as approved under planning permission reference 13/01667. CEMEX seeks to gain a bespoke environmental permit to allow the deposit of waste for recovery to facilitate the restoration scheme approved under this planning permission.
- 1.1.3 This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risks 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 following the Environment Agency's Risk Assessment guidance. It specifically relates to the potential risks 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 and is provided in Appendix A and summarised below.

2.1.4 A Nature and Heritage Conservation Screen (reference number EPR/EB3402MU/A001) was requested from the Environment Agency. This screen determines the presence of any sites of nature and heritage conservation, or protected species or habitats that may be impacted by the proposal.

2.1.5 The results of the screen (Appendix B) identified multiple areas of deciduous woodland within 1km of the site to protected habitats. The nearest is located to the north of the application site and runs along the northern boundary in a west – east direction.

2.2 Sources

2.2.1 The potential sources of risks have been considered for each risk type, as provided in Appendix A and summarised below:



Odour

- Waste materials.

Noise and vibration

- Engine noise from vehicles;
- Use of reverse vehicle warnings; and
- Use of plant and machinery.

Fugitive emissions

- Particulate matter i.e. dust;
- Scavenging birds, pests and vermin;
- Mud; and
- Litter.

Accidents

- Fire;
- Leaks and spillages;
- Flooding; and
- Unauthorised access.

2.3 Pathways

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

Table 1: Potential Pathways

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



2.4 Receptors

2.4.1 Receptors within 1km of the proposed application boundary have been identified and are shown on Drawing Number A097237/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.

Table 2: Potential Receptors within 1km of the Proposed Site Boundary

Receptor	Direction from Operational Area	Minimum Distance from proposed permit boundary (approx. m)
Designated ecological habitats e.g. Ramsars, SAC, SPA, SSSI		
N/A		
Other Designations e.g. National Parks, AONB, World Heritage Site		
N/A		
Historical buildings /listed buildings/archaeological sites		
Grade II Listed Buildings		
Riding Court Farmhouse	W	69
Cemetery Chapel	SE	393
38 Ditton Road	SE	393
Ice House in Garden Number 60 Lawn Close	S	535
The Lawn	S	620
Cedar House	S	552
Garden Wall to South and East of Datchet House	S	510
Datchet House	S	561
Church of St Mary	S	662
The Royal Stag Public	S	663
R S McColl Newsagents	S	693
Church Cottage	S	671
Milestone in pavement outside Church Cottage	S	686
Lovell Cottage	S	723
The Old Council House	S	747
Manor House Antiques the Manor House	S	751
Manor Cottage	S	753
6 and 8 High Street	S	787
The Morning Star Public	S	815
Goodwyn House	SW	882
Little Dene	SW	992
Charles Toller Antiques	SW	912
The Cottage	SW	912
Clifton House	SW	938
Holimans Platt	SW	945
The Post House	SW	990
Datchet Lodge	SW	976



The Courtyard Datchet Lodge	SW	978
Albert Cottage and Boathouse with Balustrades	SW	933
Victoria Bridge Lodge	SW	899
Agars Plough	W	772
Upton Court	NW	960
Tombs located near Church of Laurence	NW	972
Church of St Laurence	NW	971
Main Gatehouse and Bridge at admiralty compass observatory at Ditton Park	E	624
Main building at Ditton Park	E	509
Garden Walls and Summer House at Ditton Park	E	577
Granary 50 yards south west of Ditton Farmhouse	E	957
Ditton Farmhouse	E	952
Barn to south-west of Ditton Farmhouse	E	939
Schools/Hospitals/Shops		
Castleview School	NE	690
Churchmead School	S	461
Eton End PNEU School	SW	448
Long Close Prep School	NW	781
Commercial and Industrial Premises		
Computer Associates House	E	351
Nearest Domestic Dwellings		
Tree Tops	N	10
Castleview Road	NE	638
Fairfield Avenue	S	178
Slough Road	W	160
Public Rights of Way		
Public Footpath DATC/7/1	NE	658
Public Footpath DATC/1/1	NW	370
Public Footpath DATC/3/3	SW	701
Public Footpath NEWW/9/2	SW	835
Public Footpath DATC/9/1	SW	931
Highway or Minor Roads		
Riding Court Road	S	<10
M4	S	34
Major's Farm Road	SE	85
London Road	S	308
Slough Road	SW	157
Eton Road	SW	384
Ditton Road	SE	326
Horton Road	S	612
Windsor Road	SW	918
High Street	SW	711
A4	N	976
Priority Habitats (as identified by the Environment Agency)		
Deciduous woodland	N	<10
Deciduous woodland	NW	335



Deciduous woodland	SW	615
Deciduous woodland	SW	840
Deciduous woodland	SE	<10
Deciduous woodland	E	416
Deciduous woodland	NE	773
Sensitive Land Uses e.g. farmland, allotments, commercial fish farms		
Upton Court Farm	NW	798
Ditton Farm	NE	899
Riding Court Farm	N, S, E, W	Within
Surface Water		
Datchet Common Brook	N, SE	<10 and within
River Thames	SW	963
The Queen Mother Reservoir	SE	404
River Jubilee	NW	480
Canal/Moat feature ay Ditton park	NE	Adjacent
Groundwater (sensitivity)		
According to the Multi-Agency Geographic Information for the Countryside's (MAGIC) website, the site is located within a Total Catchment Zone which is defined as an area around a source within which all groundwater recharge is presumed to be discharged at the source.		
The MAGIC website shows that the superficial River Terrace Gravels are designated as a Principle Aquifer; however these deposits will be removed as part of the mineral extraction activities. There are no aquifers identified within the bedrock deposits of the site.		

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 development will have no significant impacts in terms of odour, noise and fugitive emissions, and the likelihood of accidents is minimal.



Drawings

A097237/REC/01 – Receptor Plan

P1/8698/5 – General Method of Working

P1/689/6 – Method of Working and Restoration Phases



Appendices



Appendix A – Environmental 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 odourous waste streams	Occupiers of domestic dwellings listed in Table 2.	Atmosphere	<p>The proposed waste types are not putrescible and therefore will not biodegrade to produce offensive odours.</p> <p>There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. Details of these procedures are provided in the Operating Techniques (Appendix C of the Environmental Permit Application).</p> <p>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.</p>	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 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.	Atmosphere	<p>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.</p> <p>The delivery of waste will take place in a controlled manner to keep noise/vibration to a minimum.</p> <p>As detailed on the approved phasing plan (Drawing Number P1/869/6) bunds will be placed along the perimeter of the working phases using topsoil and subsoils. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary.</p> <p>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.</p> <p>All equipment and vehicles when not in regular use shall be switched off.</p>	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

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			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 from reverse vehicle warnings.	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties adjacent to the site identified in Table 2.	Atmosphere.	<p>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.</p> <p>As detailed on the approved phasing plan (Drawing Number P1/869/6) bunds will be placed along the perimeter of the working phases using topsoil and subsoils. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary.</p> <p>Utilisation of low level warning signals.</p> <p>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.</p>	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.
Noise and vibrations from loading and unloading waste.	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties adjacent to the site	Atmosphere	<p>All noise and vibration generating activity will be confined to the operating hours permitted in the Planning Permission, except for emergency repairs.</p> <p>All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer’s requirements. This will minimise the risk of mechanical failure which could lead to an increased risk of unnecessary noise emissions.</p>	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

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	identified in Table 2.		<p>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.</p> <p>As detailed on the approved phasing plan (Drawing Number P1/869/6) bunds will be placed along the perimeter of the working phases using topsoil and subsoils. This will minimise the potential for noise to impact receptors that are situated beyond the site boundary.</p> <p>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.</p>			
Noise and vibrations from engineering works	<p>Occupiers of domestic dwellings listed in Table 2.</p> <p>Workforce in commercial and industrial properties adjacent to the site identified in Table 2.</p>	Atmosphere	<p>All noise and vibration generating activity will be confined to the operating hours permitted in the Planning Permission, except for emergency repairs.</p> <p>All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements. This will minimise the risk of mechanical failure which could lead to an increased risk of unnecessary noise emissions.</p> <p>All plant and equipment will be switched off when not in regular use.</p> <p>As detailed on the approved phasing plan (Drawing Number P1/869/6) bunds will be placed along the perimeter of the working phases using topsoil and subsoils. This will minimise the potential for noise to impact</p>	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

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			receptors that are situated beyond the site boundary.			
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Table A3: 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	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 emissions generated during unloading wastes from tipping lorries	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties adjacent to the site identified in Table 2.	Atmosphere	The site will also utilise water sprays to suppress any dust that develops on the access road. The water sprays may also be used to dampen the stockpiles if necessary. 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.	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 from haul roads	Occupiers of domestic dwellings listed in Table 2. Workforce in commercial and industrial properties adjacent to the site identified in Table 2.	Air	As shown on the 'General Method of Working' Plan (as shown on Drawing Number P1/869/5) The site will benefit from a wheel wash which will be adjacent to the site entrance on the access road. This will be used by all outgoing vehicles and therefore minimise the risk of dust to develop. The site will also utilise water sprays to suppress any dust that develops on the access road.	Dust could potentially reach the nearby dwellings when a strong wind blows in their direction. Management actions should	Local nuisance – dust on cars, clothing, vegetation, etc. Smothering.	Not significant due to management techniques employed.

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			<p>Wastes being delivered to the site will be covered or sheeted to prevent the generation of dust while the waste is in transit.</p> <p>Vehicle speeds will be limited on site and access road to prevent re-suspension and entrainment of dust.</p> <p>The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.</p>	prevent this happening.	Nutrient enrichment.	
To Water						
Contaminated rainwater run-off.	Groundwater Occupiers of domestic dwellings listed in Table 2.	Direct surface water run-off from site. Infiltration. Percolation.	<p>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 contaminated.</p> <p>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 C of the Environmental Permit Application).</p>	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/Scavenging birds						
Birds and Pests	Occupiers of domestic dwellings listed in Table 2.	Air. Ground.	<p>The proposed waste types are not putrescible and will not attract pests, vermin and/or scavenging birds.</p> <p>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 C of the Environmental Permit Application).</p>	Unlikely due to the nature of the proposed wastes types and the measures in place.	<p>Nuisance to local residents.</p> <p>Predation of species in Priority Habitats and designated ecological habitats.</p>	Not significant due to management techniques employed and the inert nature of the waste types.

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			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.			
Mud						
Mud from vehicle movements	Users of local highways	Tracked on vehicle wheels.	<p>As shown on the 'General Method of Working' Plan (as shown on Drawing Number P1/869/5) The site will benefit from a wheel wash which will be adjacent to the site entrance on the access road. This will be used by all outgoing vehicles and therefore minimise the risk of mud to develop.</p> <p>The site will also utilise water sprays to suppress any mud that develops on the access road.</p> <p>The amount of mud on local roads will monitored daily by site operatives.</p> <p>In the event that mud is deposited on the access road and/or highway then a road sweeper will be employed if necessary.</p>	Unlikely due to measures in place.	Local nuisance. Mud on roads is unsightly and can increase the likelihood of road traffic accidents.	Not significant.
Litter						
Wind blown litter	Receptors identified in Table 2.	Air	<p>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.</p> <p>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</p>	Unlikely due to measures in place.	Local nuisance	Not significant due to nature of waste received and management techniques employed.

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			<p>(Appendix C of the Environmental Permit Application).</p> <p>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.</p>			
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Table A4: Accident and Incident 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 of failure to contain firewater	Groundwater and surface water. Atmosphere. Occupiers of domestic dwellings listed in Table 2.	Infiltration. Contamination of surface water.	<p>The risk of fire is considered to be low as the proposed waste types are not flammable.</p> <p>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 C of the Environmental Permit Application).</p> <p>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.</p> <p>Site notices and training will be undertaken regarding fire hazards.</p> <p>The Site Manager will be responsible for actions undertaken in the event of a fire.</p>	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.

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Leaks and spillages.	Groundwater and surface water	Percolation.	<p>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.</p> <p>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.</p> <p>Daily vehicle/plant checks will be undertaken to ensure any fuel/oil leaks etc. are repaired as soon as possible.</p> <p>The Site Manager will be responsible for ensuring effective remediation and documenting any incident.</p>	Unlikely due to measures in place.	Contamination of land and watercourses.	Not significant due to management techniques employed.
Flooding.	<p>Groundwater.</p> <p>Surface water bodies identified in Table 2.</p> <p>Adjacent agricultural land.</p>	<p>Infiltration.</p> <p>Percolation.</p>	<p>The restored landform will be similar to the pre-development profile. As such, it is considered that there is no increased risk to flooding as a result of this application.</p> <p>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 C of the Environmental Permit Application).</p>	Unlikely due to measures in place.	<p>Disruption to works on site.</p> <p>Contamination of local groundwater and/or surface water.</p> <p>Contamination of local agricultural land.</p>	Not significant due to the management techniques employed.

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<p>Vandalism (i.e. resulting in damage to site infrastructure or equipment).</p>	<p>Groundwater.</p> <p>Surface water bodies identified in Table 2.</p> <p>Priority Habitats identified in Table 2.</p> <p>Occupiers of domestic dwellings listed in Table 2.</p> <p>Surrounding agricultural land.</p>	<p>Unauthorised entry to the site.</p>	<p>The site is surrounded by security fencing and site entrances are protected by lockable gates, which are kept locked outside of operating hours.</p> <p>The security fencing and gates will be inspected on a regular basis. Any identified damage to the fence or gates that could 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.</p> <p>There will be procedures in place which will require all visitors to the site to sign in on arrival and sign out on departure.</p>	<p>Unlikely due to measures in place.</p>	<p>Release of polluting materials to air (smokes or fumes) water or land.</p>	<p>Not significant due to management techniques employed.</p>
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Appendix B – Nature and Habitat Conservation Screen