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Project No: 311465

Environmental Risk Assessment

Prepared for:

Brockley Wood Ventures Ltd

Copdock Enterprise Park
Old London Road
Copdock, Suffolk
England
IP8 3JW

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Date	Signed
0.1	FINAL	December 2023	Graeme Kennett

Acknowledgement

This report has been prepared for the sole and exclusive use of Brockley Wood Ventures Ltd (BWV) in accordance with the scope of work presented in Mabbett & Associates Ltd (Mabbett) Letter Agreement (M310016.001/ASL/JF), dated 02 June 2023. This report is based on information and data collected by Mabbett. Should any of the information be incorrect, incomplete or subject to change, Mabbett may wish to revise the report accordingly.

This report has been prepared by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD

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Principal Environmental Consultant

This report has been reviewed and approved by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD

Project Manager, Qualifications
Job Title

Table of Contents

Section 1.0: Introduction

Brockley Wood Ventures Ltd, 'the operator', has instructed Mabbett & Associates Ltd to prepare a bespoke permit application, under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), for the proposed Inert Waste Recycling Facility (IWRF) at;

LAND AT BROCKLEY WOOD,

Belstead

Suffolk

IP8

1.1 Site setting

The total extraction site area is approximately 35ha and is in a rural setting approximately 6.5km to the south-west of Ipswich town centre, approximately 1km south-west of Belstead village, 1km south-east of Copdock village and 3km north of Bentley village.

The site is adjacent to the A12, which runs along along the western boundary. An access track defines the south-eastern boundary, which is lined by hedgerows and trees.

The immediate surrounding landscape is predominantly agricultural with scattered properties including Bentley Old Hall to the south-east and Charity Farm to the north-east. Commercial facilities, including Ainscough Crane Hire, are positioned to the north-west.

The site itself is bounded by hedgerows and woodland, including Old Hall Wood and Brockley Wood, along the eastern boundary.

1.2 Operational background

BWV are currently seeking full planning permission for the use of land for the extraction, processing, sale and distribution of sand and gravel, processing of inert waste materials and concrete batching with associated plant and related sales and distribution, access works and phased restoration, using inert recovered and imported materials, and aftercare plan. The site is anticipated to achieve an output of 180,000 tonnes per annum (tpa), resulting in a quarry life of approximately 15 years.

The IWRF will fulfil the role of 'inert processing' at the site.

The proposals have the potential to cause air quality impacts because of fugitive dust emissions associated with the operation of the scheme, as well as road traffic exhaust emissions from vehicles travelling to and from the site. An Air Quality EIA was therefore undertaken to determine baseline conditions and consider potential effects as a result of the proposals. This is detailed in the following risk assessment and Dust & Emissions Management Plan (DEMP)

1.3 The operation

The proposed IWRF will remain for the life of the quarry and will be removed at the end of site operations, including site restoration. The IWRF will process 'virgin' aggregates and process suitable incoming inert materials for, either;

- Use in the restoration operation
- Production in the Aggregate Quality Protocol (Resource Framework)

- Despatched from site as a waste for use under a suitable exemption/waste management operation

Related activities taking place at the entire site are;

- Aggregate extraction (permitted under the Mining Waste Directive)
- Concrete production[1] (permitted by the Local Authority under Section 3.1 B(b) of the Environmental Permitting Regulations 2016)
- Site restoration

The operational area itself will be in an area proposed for sand and gravel extraction, as such it will be below the current ground levels.

This qualitative environmental risk assessment followed these steps;

- Identified and considered risks for the proposed site, and the sources of those risks.
- Identified the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from the site.
- Identified the possible pathways from the sources of the risks to the receptors.
- Assessed risks relevant to the specific activity and checked that they are acceptable and can be screened out.
- States the measures in place to control risks if they are too high.
- Submit your risk assessment as part of your permit application.

A copy of the risk assessment is contained within the management system.

1.4 Risks from the site

The risk assessment identifies whether any of the following risks could occur and what the environmental impact could be:

- any discharge, for example sewage or trade effluent to surface or groundwater accidents
- odour
- noise and vibration
- uncontrolled or unintended ('fugitive') emissions, e.g., dust, litter
- visible emissions, e.g., visible dust plumes

Where these are not considered to be significant risks, this is stated in the permit application.

For each risk that applies, each actual or possible hazard was identified and stated:

- the hazard, e.g., dust, litter, type of visible emission
- the process that causes the hazard, e.g., screening and crushing inert waste
- the receptors, e.g., people, animals, property and anything else that could be affected by the hazard
- the pathways, i.e., how the hazard may get to a receptor
- the measures that will be taken to reduce any risks
- probability of exposure, for example whether a risk is unlikely or highly likely
- consequences, i.e., what harm could be caused

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/573004/blending-packing-loading-unloading-and-use-of-cement-process-guidance-note-3-01_12_.pdf

- what the overall risk is, based on what has already been stated in the table, e.g., ‘low when management techniques are applied’

1.5 Risks from noise and vibration

Assessment of predicted noise levels for the following activities has been carried out for the planning permission and covered the following on-site operations;

- Phased excavation, bunding and stockpiling of materials;
- Phased restoration of site to existing site levels using overburden and recovered inert materials;
- Washing, grading and temporary storage of excavated materials;
- Screening, washing, sorting and temporary storage of inert waste materials of restoration or recycling;
- Concrete batching; and
- Site office

To determine the impact of operation of the plant area as advised in the scoping opinion received from Suffolk County Council an assessment was carried out in accordance with BS 4142:2014+A1:2019. The assessment used SoundPLAN computer modelling software to predict noise levels during site operations including the processing plant. The assumptions made and noise source data used in the assessment concluded that the working and restoration of the site is not expected to give rise to a significant adverse impact.

1.6 Identify risk of accidents

Examples of possible accidents include:

- transferring substances, e.g., loading or unloading vessels
- overfilling vehicle fuel tanks
- plant or equipment failure, e.g., over pressurised tanks and hydraulic pipework
- vandalism
- flooding
- inadequate bunding around tanks

The risk of accidents was assumed that operator error will occur at least once every 100 times an operation is carried out, e.g.;

- drop or damage a drum from a forklift
- have a spillage from a tanker

1.7 Identify receptors

All the receptors that are potentially at risk from the site have been identified.

The main receptors that are potentially at risk were given the main focus, e.g., any groundwater beneath the site, any other receptors near the site were also considered.

These receptors included:

- protected sites and species
- anywhere used to grow food or to farm animals or fish

- drain and sewer systems
- factories and other businesses
- fields and allotments used to grow food
- footpaths
- groundwater beneath the site
- homes, or groups of homes (such as villages or housing developments)
- playing fields and playgrounds
- private drinking water supplies
- regionally important geological sites
- schools, hospitals and other public buildings
- water, e.g., ponds, streams, rivers, lakes or the sea
- conservation and habitats protected areas and areas of scientific interest (SSSIs, SPA, SAC, RAMSAR sites)

The risk assessment includes a plan that's to scale that shows:

- the site
- all the nearby receptors

Section 2.0: Summary of key parameters

Facility	Brockley Wood Inert Waste Recycling Facility
Operator	BROCKLEY WOOD VENTURES LTD
Permit ref	tbc
Location	Brockley Wood Belstead Suffolk
NGR	TM 11694 40020
what3words	quench.ecologist.apples
Location of key environmental sites	See section 3.0
Risk assessment carried out by	
Date	
Risk Criteria Summary	
Parameter 1	The site operates crushing, screening, and washing plant to produce a range of inert aggregates for use in construction projects. Waste is stored (R13) prior to and post-treatment.
Parameter 2	Please see Appendix X
Parameter 3	Quantity of waste accepted at the facility <250,000 tonnes per annum.
Parameter 4	All waste will be stored and treated on an impermeable surface with a sealed drainage system.
Parameter 5	There are no point source discharges to controlled waters.
Parameter 6	The activities are not carried out within a groundwater source protection zone 2, or within 250 m of any well, spring, borehole used for the supply of water for human consumption, including private water supplies.
Parameter 7	The treatment process is carried out within 250 m of the nearest sensitive receptor.
Parameter 8	The treatment activity is not carried out within 500 m of a European Site or a Site of Special Scientific Interest (SSSI)
Parameter 9	The treatment activity is not carried out within 500 m of a LNR

Section 3.0: Summary list of environmental receptors

Site name/description	Distance from site	Details
Designated and non-designated habitats and wildlife sites		
		There are no statutory designated sites within the site boundary, however Brockley wood is designated (but non-statutory) County Wildlife Site. There are no historic monuments within site, however there are several listed buildings in the area surrounding the site, such as Charity Farm and Bentley Old Hall.
Priority habitat inventory		
		None
Groundwater and abstractors		
		N/A
Groundwater vulnerability		
		Medium/High
Source Protection Zones		
		Zone III (Total catchment)
Water protection zone and status		
		Drinking Water Safeguard Zones (Surface Water)
Soil classification		
		The land has three main soil types: coarse loamy and sandy soils; medium loams over gravel and heavy slowly permeable soils. The site is a combination of subgrade 3a and 3b agricultural quality, variably limited by wetness and droughtiness restrictions.
Surface water		
		Two easterly flowing streams that are present on the site both converge just to the east of Old Hall Wood where the stream then flows south-east into the Alton Reservoir approximately 2km from the site.
Flood risk		
		Flood Zone 1 but has an area of fluvial Flood Zone 3 within it.
Air Quality Management Area		
		The site does not lie in an air quality management area

Section 4.0: Summary list of sensitive receptors

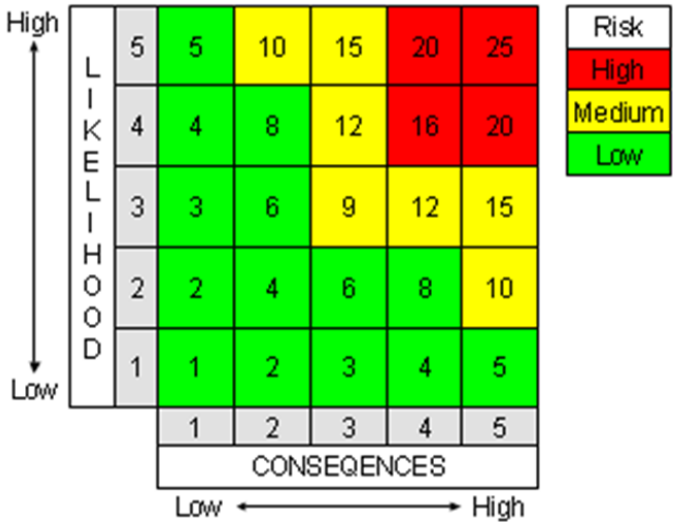
Receptor	Type	Direction	Distance
Tudor House	Residential	W	
Red House	Residential	NW	
Hare Cottage	Residential	N	
Crope Hall	Residential	ENE	
Charity Farm	Residential	ENE	
Bentley Old Hall	Residential	ESE	
London Road	Residential		
Old Hall Wood CWS(?)	Ecological		
Brockley Wood CWS	Ecological		
Bentley Long Wood [Ancient Woodland]	Ecological		

Section 5.0: Risk criteria rating

Risk ratings are based on the likelihood of an event occurring multiplied by the severity of potential impact. Ratings are made of residual risk following implementation of preventative measures on site. The following scale is applied to rate these parameters:

Severity		Likelihood	
1	No environmental harm arising	1	Very unlikely to happen
2	Fleeting localised impacts	2	Low probability/occasional
3	Localised impacts medium term	3	Likely to occur
4	Wider scale impacts of a fleeting nature, or localised impacts of a more persistent nature	4	Highly likely to occur
5	Widespread/persistent impacts on high amenity/sensitive sites	5	Inevitable

Final calculated risk levels rating bands are as follows



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 want 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 contact (1-5)*	*What is the harm that can be caused? (1-5)*	*What is the risk that still remains? (Likelihood x Severity)*
Release of dust (crushing)	Local human population	Air – windblown dispersion in the atmosphere	Plant will be provided with dust suppression systems in place. All personnel employed on site will undertake visual monitoring for dust throughout the working day. Any observed problems will be reported to the Site Manager who will investigate the cause and implement any necessary remedial action.	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts 1	**Very low 1**
Release of dust (screening)	Local human population	Air – windblown dispersion in the atmosphere	Plant will be provided with dust suppression systems in place. All personnel employed on site will undertake visual monitoring for dust throughout the working day. Any observed problems will be reported to the Site Manager who will investigate the cause and implement any necessary remedial action.	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts 1	**Very low 1**
Dust from the movement of	Local human population	Air – windblown dispersion in the	Provision of a two-way metalled road between the A12 and operational	Very unlikely to happen	Nuisance – dust on cars, clothing	**Very Low 1**

vehicles to and from the site		atmosphere	area. Haul roads to have a consolidated but permeable surface. All active site roads will have an imposed speed limit of 10mph. Main access roads to be swept with a mechanical road sweeper as and when conditions dictate.	1	and inhalation of dusts 1	
Mud on roads from the movement of vehicles to and from the site	Local human population	Deposited on the ground by vehicles entering and exiting the site	Provision of a two-way metalled road between the A12 and operational area. Haul roads to have a consolidated but permeable surface. All active site roads will have an imposed speed limit of 10mph. Main access roads to be swept with a mechanical road sweeper as and when conditions dictate.	Very unlikely to happen 1	No environmental harm arising 1	**Low** **1**
Release of particulate matter from input material deliveries to, stored and despatched from site.	Local human population	Air – windblown dispersion in the atmosphere	Material arrives as inert wastes and are unlikely to generate dust. All vehicles using the facility will ensure their loads are adequately sheeted or otherwise contained.	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts 2	**Low** **2**
Input material may contain litter.	Local human population	Air – windblown dispersion in the atmosphere	Input material derived from strictly controlled sources and is unlikely to contain litter. Any office waste generated on site	Very unlikely to happen 1	Nuisance – dust on cars, clothing and inhalation of dusts	**Low** 1

	Adjacent land		will be stored in sealed bins and removed from site on a regular basis to ensure that volumes of all types of waste do not accumulate on site. Any litter is cleared from any affected areas outside the site as soon as possible.		1	
Odour from delivered input material	Local human population	Air – windblown dispersion in the atmosphere	Input material has a low propensity to produce, or release, odour.	Odours are unlikely to impact on local receptors as materials are non-odourous. I	Localised impacts medium term I	**Low** **I**
Odour from the treatment process	Local human population	Air – windblown dispersion in the atmosphere	Input material has a low propensity to produce, or release, odour.	Odours are unlikely to impact on local receptors as materials are non-odourous. I	Localised impacts medium term I	**Low** I
Odour from storage of input material in the process	Local human population	Air – windblown dispersion in the atmosphere	Input material has a low propensity to produce, or release, odour.	Odours are unlikely to impact on local receptors as materials are	Localised impacts medium term I	**Low** I

				non-odourous. I		
Flies in waste	Local human population	Air	The input material is not susceptible to fly infestation.	Flies are unlikely to impact on local receptors as waste is not susceptible to fly infestation. 1	Nuisance – unlikely 1	Low 1
Rodent infestation	Local human and wildlife population	Over land	The input material is not it susceptible to rodent infestation.	Rodents are unlikely to impact on local receptors as waste is not susceptible to infestation. 1	Nuisance – unlikely 1	Low 1
Scavenging birds and animals	Local human and wildlife population	Over land and through the air	The input material is not it attractive to scavengers.	Scavengers are unlikely to impact on local receptors as waste is not attractive. 1	Nuisance – unlikely 1	Low 1

Noise from vehicle movements/ deliveries	Users of highway, local workplaces, and local dwellings.	Air	Vehicle movements for are scheduled to occur Monday to Friday during normal working hours. The Site Manager is responsible for ensuring vehicles are turned around efficiently, with least impact on the neighbouring properties and that vehicles are removed from the surrounding roads quickly. Plant (and haul roads) to be maintained in good order and operated in a manner conducive to not generating unnecessary noise. Reversing alarm sounders on site-based mobile plant to be of the non-tonal type, unless otherwise dictated by health & safety considerations.	Site located adjacent to a busy dual carriageway (A12) with good access to main routes. Location has good access for the highway. Infrequent impact to neighbours to cause nuisance 2	Nuisance from noise. Duration should be short as vehicle movements reduced 1	Low 2
Noise/vibration from plant	Local human and wildlife population	Air	Plant (and haul roads) to be maintained in good order and operated in a manner conducive to not generating unnecessary noise.	Very unlikely to happen 1	Nuisance – from noise vibration 1	**Low** **1**
Delivery of input materials	Ground/groundwater/ surface water	Spillage through ground	All deliveries will be supervised and will take place during normal working hours. The input material is solely non-hazardous inert wastes.	Low as supervised delivery procedure in place .	Pollution of watercourse/ groundwater/land 3	**Low** 3

			Deliveries take place only on a sealed, impermeable concrete area. State of repair of the surface is monitored on a regular basis, and proactive maintenance carried out if necessary. No liquid wastes accepted.	1		
Chemical delivery	Ground/groundwater/ surface water	Spillage during delivery to drain/ground	Chemicals only stored with secondary containment. No drains within building. Low volumes kept on site. No access to surface or ground water. Risk of spillage/response to spillage dealt with in incident response plan. Tailored spill kit to be kept on site in the locality of deliveries.	Very unlikely to happen 1	Pollution of watercourse/ groundwater/land 4	**Low** **4**
Storage of small volumes of chemicals	Local environment	Spillage during use or transferring	All chemicals are stored with lids or caps secured. All chemicals are stored to ensure substances are not exposed to conditions that could cause a reaction and spillages are contained. Chemicals are segregated as appropriate and stored in secondary containers to catch any small spillages.	Very low volumes are kept on site Storage is contained and indoors 1	Harm to local environment and animal health 2	**Low** **2**
Flooding of site	Local human	Contaminated	Permitted waste types are non-	No history of	Contamination	**Low**

	population and local environment	flood waters	hazardous so any waste washed off site will add to the volume of the local post-flood clean-up workload, rather than the hazard. Site is in an area at very low risk of flooding (Zone 1).	flooding in the area. Site is within an area identified at very low risk of flooding. 1	of buildings / natural habitats downstream 1	**1**
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic content.	All surface waters close to and downstream of site.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	All processing operations are carried out entirely within sealed surfaces within the site. Building is 100 m from a water course on an impermeable surface with no connection to a surface water drainage system. Any liquids kept in containers and provided with secondary containment. Permitted waste types do not include sludges or liquids.	Very unlikely to happen 1	Pollution of watercourse/ land 4	**Low** **4**
Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic content.	Groundwater	Transport through soil/groundwater then extraction at borehole.	All processing operations are carried out entirely within sealed surfaces within the site. Building is 100 m from a water course on an impermeable surface with no connection to a surface water drainage system.	Very unlikely to happen 1	Pollution of groundwater/land 4	**Low** **4**

			Any liquids kept in containers and provided with secondary containment. Permitted waste types do not include sludges or liquids.			
Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Local human population and local environment	Air transport of smoke. Firewater runoff from site.	Input materials are not considered flammable. Permitted activities do not include the burning of waste. All plant and equipment are modern and are fitted with fire suppression systems.	Negligible 1	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or vandals. Pollution of water or land. 3	**Low** **3**
Unauthorised access to site	Bodily injury to person or animal entering site	Direct physical contact	The site is located within the quarry and surrounded by perimeter fencing and a lockable gate to the entrance. Building entrance is security controlled and locked always when staff are not present on site. The site is fitted with remote 24/7 CCTV system so staff are alerted to the presence of intruders. All vehicles/people entering the site will be received by the main reception operator who will be present in the area while the site is open.	Low as site is locked and fenced when not manned Access to the site is controlled during operating hours. 1	Bodily injury/damage to plant 3	**Low** **3**

Arson and / or vandalism causing the release of polluting material to air (smoke or fumes), water or land.	Local human population, staff, firefighters, vandals or local environment.	Air transport of smoke. Firewater runoff from site.	The site is located within the quarry and surrounded by perimeter fencing and a lockable gate to the entrance. Building entrance is security controlled and locked always when staff are not present on site. The site is fitted with remote 24/7 CCTV system so staff are alerted to the presence of intruders. All vehicles/people entering the site will be received by the main reception operator who will be present in the area while the site is open.	Site is secure 1	Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or vandals. Pollution of water or land. 3	**Low** **6**
Harm to protected site through nutrient enrichment, leachate, contaminated surface water run-off, smothering, disturbance or predation.	Protected sites - European sites and SSSIs protected species/habitats and other nature conservation sites (LWS)(LNR).	Any	Sites are protected as the processing only takes place on an impermeable surface.	Very unlikely to happen 1	No environmental harm arising 1	**Low** **1**

Section 6.0: Impact on the Environment

This environmental risk assessment (ERA) has been carried out to assess the environmental risks posed by the proposed activity.

There are no point source emissions to land, air, surface or groundwater from the proposed facility.

The proposed facility will have drainage infrastructure in place at the site so that all potentially contaminated site drainage is captured and directed via a sealed system, consisting of concrete impermeable pavement with falls towards the drain channels that captures all liquids and directs it to a sealed tank.

Operational procedures at the site will monitor and manage amenity and accident risks from the proposed activities and includes provision for the monitoring of odour, noise, and fugitive emissions.

The impact of the proposed development on surrounding human and environmental receptors has been assessed in the ERA.

As the management measures detailed in the risk assessment will be in place from commencement of operations, the conclusion has been reached that the proposed waste materials and treatment activities, are unlikely to result in a significant accident risk or risk to the local environment, including from odour and noise, or pollution of surface or ground waters.

Section 7.0: Site Management

Site management will comprise of the following staff members;

- A Technically Competent Manager (TCM); who will manage the operation and regularly attend site in compliance with the defined attendance requirement.
- A site supervisor; who will be responsible for the ongoing operation who may also undertake office and plant operation duties.
- Other trained plant operators as required.

Section 8.0: Site Condition Report

The Site Condition Report (SCR), produced as a part of this application for the proposed operation will be limited in its scope as the current area will be excavated during the proposed sand and gravel extraction operation.

However, the proposed facility will operate with due regard to the conditions of the environmental permit and all relevant environmental legislation to ensure that land and groundwater is protected during the lifetime of the site and that the land is in a satisfactory state when the permit is eventually surrendered.

The possibility of any significant releases to the ground occurring during the lifetime of the permit is therefore limited. Minor spillages, if they occur, will be dealt with immediately by trained staff using appropriate spill response procedure and spill kits located around the site.

Section 9.0: Sources of information

Proposed Quarry at Brockley Wood Settings Assessment - Cotswold Archaeology October 2021 [CA Report SU0283_2]

Air Quality Environmental Impact Assessment Brockley Wood, Belstead - Redmore Environmental Ltd March 2022 [4730r1]

Proposed Quarry Assessment of Sound Levels – Sharps Redmore February 2022 [2120502]