



Sustainable Solutions, Assured

WRM

wrm-ltd.co.uk

01943 468138

Mining Waste Management Plan

v1.0

Environmental and sustainability solutions provided to
Brockley Wood Ventures Ltd

This report was prepared by **Walker Resource Management Ltd (WRM)** within the terms of its engagement and in direct response to a scope of services. This report is strictly limited to the purpose and the facts and matters stated in it and does not apply directly or indirectly and must not be used for any other application, purpose, use or matter. In preparing the report, WRM may have relied upon information provided to it at the time by other parties. WRM accepts no responsibility as to the accuracy or completeness of information provided by those parties at the time of preparing the report. The report does not take into account any changes in information that may have occurred since the publication of the report. If the information relied upon is subsequently determined to be false, inaccurate, or incomplete then it is possible that the observations and conclusions expressed in the report may have changed. WRM does not warrant the contents of this report and shall not assume any responsibility or liability for loss whatsoever to any third party caused by, related to, or arising out of any use or reliance on the report howsoever. No part of this report, its attachments or appendices may be reproduced by any process without the written consent of WRM. All enquiries should be directed to WRM.

Document Title	Mining Waste Management Plan	
Client	Brockley Wood Ventures Ltd	
Revision	v1.0	
Date	17/12/2025	
Document Reference	Bespoke MPP Deployment Supporting Information	
Project Reference	1542/J05	
Author: Graeme Kennett		Reviewer: Martin Ropka

Copyright ©

All material on these pages, including without limitation text, logos, icons and photographs, is copyright material of Walker Resource Management Ltd (WRM). Use of this material may only be made with the express, prior, written permission of WRM. This document was produced solely for use by the named client to whom the document refers. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of WRM. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests.

REVISION LOG

Revision	Details	Date
0.1	First draft	17/12/2025
1.0	Final version for submission	

CONTENTS

1.0	INTRODUCTION	1
1.1	Overview	1
1.2	Scope.....	2
1.3	Key local considerations:	2
1.4	Waste management objectives	3
1.5	Site location:	3
1.6	Site area:	3
1.7	Defined post restoration use	3
1.8	Hydrogeological setting:	3
2.0	MINING WASTE FACILITY CLASSIFICATION	5
2.1	Site context	5
2.2	Category A assessment	5
2.3	Conclusion	6
3.0	WASTE PREVENTION AND REDUCTION.....	7
4.0	WASTE CHARACTERISATION.....	9
4.1	Site background.....	9
4.2	Site geology - published information.....	10
4.3	Silt lagoons	12
4.4	Gas generation.....	13
4.5	Leachate generation.....	13
4.6	Waste acceptance	13
4.7	Waste that does not need testing	14
4.8	Import of non-extractive waste materials for direct use.....	15
4.9	Import of other non-extractive waste materials	15
5.0	SITE OPERATIONS AND WASTE TREATMENT	17
5.1	Operational hours	17
5.2	Phasing plan	17
5.3	Construction (pre-operational) phasing plan	19
5.4	Phase 1b	21

5.5	Phase 2c.....	23
5.6	Operational phasing	23
5.7	Material stockpiling	25
6.0	ENVIRONMENTAL RISK ASSESSMENT	27
6.1	Management system.....	27
6.2	Management structure and responsibilities	27
6.3	Technical competence and training	28
6.4	Site permit.....	28
6.5	Site security	28
6.6	Managing documentation and records.....	29
6.7	Reporting non-compliance and taking corrective action	29
6.8	Compliance checking	30
6.9	Design and constructions	30
6.10	Accident Management Plan.....	31
6.11	Hazard identification	31
6.12	Unauthorised waste receipt and processing	32
6.13	Equipment fire	32
6.14	Loss of containment – Spillage and leakage	32
6.15	Security and vandalism	33
7.0	RISK MITIGATION.....	35
8.0	CONTROL AND MONITORING	36
8.1	Surface water.....	36
8.2	Groundwater monitoring	38
8.3	Noise monitoring	39
8.4	Noise measurement	41
8.5	Result assessment	41
9.0	PROPOSED PLAN FOR CLOSURE	43
9.1	Ecology and Landscape Management Plan	43
9.2	5-Year aftercare plan	44
9.3	Closure	44
10.0	POLLUTION PREVENTION MEASURES	45
10.1	Waste containment and placement	45

10.2	Surface water management	45
10.3	Groundwater protection	46
10.4	Waste acceptance and control	46
10.5	Dust and air quality management	47
10.6	Noise and vibration control.....	47
10.7	Fuel and oil management.....	47
10.8	Stability and erosion measures	47
10.9	Incident and non-conformance management	47
Table 4-1: Indicated mineral resource summary table		11
Table 4-2: Waste types expected to be generated on site by sand and gravel extraction		12
Table 4-3: Expected silt lagoon volumes.....		12
Table 5-1: Extraction phase details		18
Table 8-1: Proposed groundwater monitoring network.....		38
Table 8-2: Recommended monitoring schedule		39
Table 8-3: Noise monitoring locations		40

1.0 INTRODUCTION

1.1 Overview

Directive 2006/21/EC of the European Parliament and the Council of 15 March 2006 on the management of waste from extractive industries (the Mining Waste Directive, MWD) and amending Directive 2004/35/EC was published in the Official Journal of the European Union on 11 April 2006 (L102/15). There are also five subsequent Commission Decisions that provide detail on specific areas of the Directive. The overall objective of the Directive is to prevent or reduce as far as possible any adverse effects on the environment as well as any resultant risk to human health from the management of waste from the quarrying and mineral extraction industries.

The Directive covers the management of waste resulting from the prospecting, extraction, treatment and storage of mineral resources. This is known as extractive waste. Examples include residues from treatment of mineral resources, and topsoil, rock and overburden moved to access mineral resources.

A mining waste operation is defined in the Regulations as meaning the management of extractive waste, whether or not involving a mining waste facility, that falls within the meaning of Article 2 of the Directive. A mining waste operation is a Regulated Facility for the purposes of the Regulations. Certain requirements are waived for some types of extractive wastes.

The overarching general requirements of the Mining Waste Directive are set out in Article 4 of the Directive, and they require the operator to take the necessary measures to ensure that extractive waste is managed in a controlled manner without endangering human health or harming the environment.

Article 5 of the Directive requires that the operator prepares a Mining Waste Management Plan (MWMP) for the minimisation, treatment, recovery and disposal of extractive waste, taking account of the principle of sustainable development.

The following sections provide the information that the Environment Agency (EA) consider is necessary for the operator to include in the MWMP.

The primary purpose of the MWMP is to demonstrate that the mining waste operation will meet the requirements of the Directive. The Environmental Permit requires that the operator carries out the mining waste operation, including backfilling, according to this WMP and that records will be kept demonstrating permit compliance.

The Waste Framework Directive (2008/98/EC) was amended in 2018 (2018/851) to include a definition of 'backfilling'. Backfilling is any recovery operation where suitable non-hazardous waste is used for reclamation in excavated areas or for engineering in landscaping. This definition applies when EU member states calculate quantities of non-hazardous construction and demolition wastes for reporting purposes. The UK is no longer subject to that reporting. This means backfilling is not restricted only to non-hazardous waste for the purposes of assessing if an activity is recovery.

1.2 Scope

This MWMP outlines procedures for managing waste and backfilling operations at Brockley Wood Quarry in compliance with:

- Environmental Protection Act 1990 (Duty of Care)
- Environmental Permitting (England and Wales) Regulations 2016
- Waste (England and Wales) Regulations 2011
- Quarries Regulations 1999
- Mineral Planning Authority (MPA) Planning Conditions

1.3 Key local considerations:

- Suffolk Minerals & Waste Local Plan (adopted 2020) – Ensures quarry restoration meets agricultural land quality standards.
- [Waste recovery plans and deposit for recovery permits - GOV.UK](#)
- Water Management – Suffolk has areas sensitive to groundwater pollution, so leachate controls and silt management are key.
- Landscape and ecology – Restoration incorporates and retains biodiversity elements (hedgerows, field margins).

1.4 Waste management objectives

- Minimise waste generation during extraction and processing.
- Use only approved inert waste for backfilling, ensuring compliance with restoration goals.
- Restore the site to agricultural use, ensuring soil quality and drainage suitability.

1.5 Site location:

Brockley Wood Quarry,
Brockley Wood Land off A12
Belstead
IP8 3JS

1.6 Site area:

Total site area is 37.5 ha, of which approximately 29 ha will comprise mineral extraction and infilling with inert material.

1.7 Defined post restoration use

Agricultural land

1.8 Hydrogeological setting:

It is considered that there are two principal pathways through which the site could impact receptors:

1. Vertical infiltration of rainfall through the imported material and unsaturated sand and gravel to the water table
2. Lateral migration of contaminants through groundwater within the sand and gravel

The London Clay, underlying the sand and gravel and the site, is a barrier to vertical flow, therefore it is considered that there is no pathway to the chalk.

Shallow groundwater in the sand and gravel is considered to discharge to the watercourses adjacent to the site, these flow into the Alton Reservoir approximately 2 km downstream of the site, which subsequently discharges into the River Stour. Therefore, the watercourses are considered to be a secondary pathway.

The following features are considered potential receptors for contamination:

1. Groundwater quality in the sand and gravel aquifer
2. Groundwater quality at the unlicensed water abstraction located at Charity Farm
3. Surface water quality within adjacent watercourses

The River Stour Ramsar site is considered to be a secondary receptor due to the hydraulic link to the site via the watercourses.

The Source Protection Zone (SPZ)³, which the site is located within, is considered to be associated with abstractions from the deeper chalk aquifer. These abstractions are not considered to be receptors as the London Clay prevents a pathway linking activities at the site to the underlying chalk aquifer.

A conceptual plan is provided on Drawing 3777/HRA/02 and a conceptual cross-section is provided on Drawing 3777/HRA/03.

2.0 MINING WASTE FACILITY CLASSIFICATION

In accordance with Article 5.3(a) of the Mining Waste Directive (2006/21/EC), implemented in England and Wales through the Environmental Permitting (England and Wales) Regulations 2016 (as amended), the operator of Brockley Wood Quarry has assessed the status of the mining waste facility associated with the site.

The purpose of this assessment is to determine whether the facility constitutes a Category A mining waste facility, or whether it can be classified as non-Category A with supporting justification.

2.1 Site context

Brockley Wood Quarry is a sand and gravel extraction site located in Suffolk. The site produces non-energy extractive minerals and generates mining waste in the form of:

- Overburden and interburden material (typically clays, soils, and subsoils),
- Silt and fines generated from mineral washing,
- Temporary stockpiles and restoration bunds.

All mining waste produced at the site is non-hazardous and typically inert in nature. No hazardous substances are generated, stored, or disposed of within the mining waste facility.

2.2 Category A assessment

Under Article 9 and Annex III of the Mining Waste Directive, a mining waste facility is classified as Category A if:

1. A failure or incorrect operation could result in a major accident (particularly due to the presence of a dam or embankment),
2. It contains hazardous waste above certain thresholds,
3. It contains substances or preparations classified under Seveso III Directive (Directive 2012/18/EU) above threshold quantities.

A review of the operational practices and facility design at Brockley Wood Quarry confirms the following:

1. No engineered dam, embankment, or structural containment is present that could, in the event of failure, cause a major accident.

2. Both the extractive and non-extractive waste materials are non-hazardous and stored in a stable manner.
3. The quantities of dangerous substances on site (e.g., diesel fuel, lubricants) are minimal and stored in compliance with standard safety procedures, well below the thresholds defined in the Seveso III Directive.
4. The site does not contain or handle any materials which meet the criteria for classification as hazardous under the CLP Regulation (EC No 1272/2008).

2.3 Conclusion

Based on the above assessment, it is concluded that the mining waste facility at Brockley Wood Quarry does **not** meet the criteria for classification as a Category A facility.

This classification is made with due regard to the definitions and thresholds provided in the Mining Waste Directive, and the operator will continue to review the classification should site conditions or operational practices change.

3.0 WASTE PREVENTION AND REDUCTION

The proposed extraction activities have been designed to prevent waste production, where possible, and reduce the quantities generated in all other cases.

A development plan for the site was produced as part of the planning application that defines the nature of extraction operations (refer to Section 5 for further details on site operations and waste treatment) and contains a materials balance plan which presents the estimated quantities and rate of waste to be generated over the extraction period. A copy of the Mineral Resource Assessment Summary (MRSA) (June 2023) is provided and should be read in conjunction with this MWMP.

The nature of the site operations and the treatment processes have been designed to minimise waste production by consideration of the phasing sequence, mineral extraction method and selection of plant and machinery.

Further reductions in waste production from that detailed in the materials balance plan are not anticipated due to the nature of the geological strata, i.e. the waste to mineral ratio.

A key control on waste prevention will be the removal and proper storage of topsoil (which does not comprise waste) in separate stockpiles to other extractive wastes. It is proposed to replace the topsoil after closure of each mining waste phase, i.e. use it for site restoration, and, therefore, it is not envisaged that other re-use options will be required. The MRSA indicates the quantity of topsoil estimated to be removed, stored and used for restoration purposes.

Similarly, waste material, i.e., non-extractive waste, which is to be deposited in the void will be temporarily stored in a separate area of the site. The MRSA indicates the quantity of such material estimated to be removed, stored and used to backfill the void for the purpose of restoration. This process will ensure that waste is recovered where it is both feasible and suitable.

It is not proposed to use chemicals to treat the extracted material and, therefore, the use of less dangerous substances is not a consideration at this site.

During the operation of the facility, further measures to reduce the quantity of waste generated will be considered as necessary, e.g. during review of the Waste Management Plan and/or when plant or machinery needs replacing.

4.0 WASTE CHARACTERISATION

The development comprises the extraction of glacial sand and gravel on land at Brockley Wood, Belstead, near Ipswich, Suffolk, in a phased working scheme, with the sand and gravel processed and sold into the local construction market. The excavation will extend down to within 0.5m of the general groundwater level, with no requirement for any de-water operations to extraction the proven mineral deposits.

It is proposed that the in-situ deposits of sand and gravel will be excavated and processed on-site within a dedicated processing plant. The near surface overburden clays and soils used to restore the site as part of a phased working and restoration scheme.

It is also proposed that overburden, and recovered, clays will be used to form a basal artificial geological barrier, as required by the Environment Agency (EA), prior to the importation and placement of inert material. An assessment, namely BW Geology & Resource Report Project No.: BWV/BW/100, was carried out as part of the site suitability. The following sections are taken from that report. The full report should be read in conjunction with this MWMP.

4.1 Site background

The sand and gravel quarry will be restored, via the deposit of waste for recovery, to approved final contours to provide land suitable for agricultural use in accordance with the site's planning permission. These non-extractive waste materials will be used to supplement the extractive waste generated as part of the quarrying activity.

The proposed non-extractive wastes for use in the scheme are listed in the Waste Acceptance Procedures.

Only suitable inert wastes that meet the Landfill Directive definition of inert will be used to create the subsoil restoration profile, with BS3882:2015 compliant soils used to produce a final topsoil layer suitable for use in agriculture to Grade 3 (3a/3b) classification. Most wastes to be accepted at the site will be excavated materials from local civil engineering and construction works. The wastes arising from each site or process will be adequately characterised by a site investigation or appropriate process analysis. The criteria for the

acceptance of wastes have considered the environmental assessments submitted with this application, to ensure that there are no:

- unacceptable emissions to groundwater, surface water or the surrounding environment; and
- unacceptable risks to human health.

This section provides details of the waste types and the acceptance criteria that will be accepted on site for the purpose of restoration. Reference has been made to the following:

- [Waste acceptance procedures for deposit for recovery - GOV.UK](#)
- [Waste recovery plans and deposit for recovery permits - GOV.UK](#)
- [SR2015 No 39: use of waste in a deposit for recovery operations - GOV.UK](#)
- [Risk assessments for your environmental permit - GOV.UK](#)
- [84_11 EPR 6.14 How to comply with your environmental permit: Additional guidance for mining waste operations](#)

4.2 Site geology - published information

With reference to the British Geological Survey (BGS) geological mapping (1:50,000 Sheet 207 - Ipswich) and regional guide (British Regional Geology: London and the Thames Valley), the geology of the site is indicated to comprise glacial deposits overlying strata of the Kesgrave Formation of Quaternary age, which in turn overlies the Red Crag Formation of Neogene age. The Red Crag is underlain at depth by London Clay and Harwich Formation strata of Eocene age.

The glacial deposits across the site are largely indicated to comprise glaciofluvial sands and gravels of the Lowestoft Formation, however Lowestoft Formation glacial till (boulder clay) is indicated in the south-western part of the site and in the extreme north-eastern corner of the site, and a small area of lacustrine (lake) silts and clays is indicated to encroach a short distance into the site immediately northwest of the central part of the site.

The glacial sand and gravel unit and upper part of the Kesgrave Formation forms the mineral deposit that will be worked, whilst the clay-rich glacial till and lake deposits form an overburden to the mineral.

The Mineral Assessment Report (TM14 - Sand and gravel resources around Ipswich, Suffolk) published by the BGS discusses the sand and gravel resources of the country around Ipswich. The Glacial Sand and Gravel mapped in the Ipswich area is shown in published map shown in Figure 3. This infers that the sand and gravel commonly lies on the higher plateau areas and is generally described as pale yellow to orange in colour, fine to medium grained sand with flint gravel.

These deposits are commonly silty and comprise mainly (up to 80%) fine to medium sand. Published information indicates that the Glacial Sand and Gravel deposits have a mean thickness of 8.5m, with some areas over 15m in thickness.

Boulder Clay is locally present overlying the Glacial Sand and Gravels and is described as firm bluish-grey clay containing pebbles of chalk, flint and vein-quartz with some pebbles of Jurassic igneous and metamorphic origin.

The Kesgrave Formation underlying the glacial sands and gravels in the area is described as mainly comprising gravels with some sand. The underlying Red Crag Formation comprises coarse-grained shelly sands.

4.2.1 Site testing

Laboratory grading results indicate that the material is generally a clean sand and gravel deposit that contains a majority of sand with little or no oversize gravel fraction. The gradings indicate that the material will be suitable for a range of single size gravel products (10mm and 20mm) together with the production of coarse (sharp) sand from the deposit for use in concrete. A fine (soft) sand product will also be available for the deposit.

Table 4-1: Indicated mineral resource summary table

Extraction area	Soils and overburden	In situ mineral volume	In situ mineral resource	Saleable reserves (est)
26.8 ha	407,000 m ³	1,714,000m ³	2,915,000t	2,771,000t

Table 4-2: Waste types expected to be generated on site by sand and gravel extraction

EWC	Description
01 01 02	wastes from mineral non-metalliferous excavation
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11

4.3 Silt lagoons

The extraction of the sand and gravel reserves will generate waste (extractive waste), comprising the soil and overburden (largely clay) which needs to be removed to access the deposits, oversize material and fines (silt) which will be separated out from the required product during the on-site treatment process.

Silt will be separated out from the product during the washing process; the silt will be settled out in a series of lagoons before the water is recycled back to the wash plant. The silt will not be removed from the lagoons, which will therefore become mining waste facilities.

The following table indicates the expected volume of silt that will be generated from each phase. Operational experience suggests that the residual silt will be approximately 10% of the raised minerals. Please note that at this time, these numbers may change according to real world conditions, however they represent the projected required capacity for each phase and lagoon.

Table 4-3: Expected silt lagoon volumes

Lagoon	Phase	Extraction tonnage	Expected silt production (t)
1	1a	690,000	69,000
	2a		
	2b		

	1b		
2	2c	1,538,000	153,800
	3		
3	4	687,000	68,700

4.4 Gas generation

In the context of 'normal' non-hazardous sites, biodegradation of the organic component of the waste would be the source of the biogenic gas generation. However, since the activity will accept only inert materials as subsoils it is projected that only a negligible level of organic material could be present in the wastes, therefore the risk of the production of biogenic gas will be negligible. The bulk of the wastes to be accepted at the site will comprise excavated soils.

4.5 Leachate generation

The restoration materials are not expected to produce a contaminating leachate, and no active or passive controls are proposed.

4.6 Waste acceptance

The waste acceptance procedures set out the:

- evidence needed from producers to confirm the waste matches its description
- measures that will be taken to make sure the waste is not contaminated
- criteria that will be used to decide whether or not to accept the waste, for example the results of waste testing
- any other criteria that will be used to make sure that the project will only accept waste that the permit authorises

Wastes entering sites will undergo a three-tier testing protocol as detailed below:

Level 1: Basic Characterisation. This is a thorough determination, according to consistent analysis and behaviour testing methods of the short- and long-term leaching behaviour and/or characteristic properties of the waste.

Level 2: Compliance Testing. This is periodical testing by simpler standardised analysis and behaviour testing procedures to establish whether the waste follows permit conditions and any specific restoration material requirements. This assessment will focus on important variables and behaviour identified by basic characterisation and will be carried out at least annually.

Level 3: On-site verification. This establishes rapid check methods to verify that a waste is the same as that which was been subjected to compliance testing and that which is described in the documentation accompanying the waste. It may consist merely of a visual inspection of the waste before and/or after unloading.

A visual inspection to satisfy the Level 3 on-site verification requirements will be carried out on all wastes deposited at the site whether within the LGV or during/after deposit.

All waste accepted for recovery, or treatment at the on-site facility, will be accompanied by a WTN as required by DoC Regulations and checked by the weighbridge operator before the vehicle is permitted to access the site.

A register of the quantities and characteristics of waste accepted at the site will be maintained on a computerised database. A record will also be maintained of all waste that is removed from the facility.

A quarantine area will be located within the operational site area, where any non-conforming loads identified following discharge will be segregated pending additional investigations.

4.7 Waste that does not need testing

Waste producers do not need to test their waste (except for testing it for classification), if they are in the following list of waste codes and:

- come from a single source
- are well characterised and described
- carry no risk of contamination, for example from a site that has not previously been developed

However, if it is considered that the waste may potentially be contaminated and the waste producer has not provided any analysis results to disprove this, the waste will be rejected.

Table 2-4: List of waste codes that do not need analysis (where authorised)

EWC	Description
01 01 02	wastes from mineral non-metalliferous excavation
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics
17 05 04	soil and stones
19 12 09	minerals (for example, sand and stones)
20 02 02	soil and stones

4.8 Import of non-extractive waste materials for direct use

Where materials are pre-assessed suitable for direct use in the restoration phase, they will undergo the three-tier testing protocol as outlined in the Waste Acceptance Procedure. They will then be directed to the working area, or to the appropriate, temporary stockpile.

4.9 Import of other non-extractive waste materials

4.9.1 Manufactured soils

Manufactured soils will be imported under EWC 19 12 12 soil substitutes [A material produced by combining mineral matter and organic matter of suitable quality that provides functions similar to that of natural topsoil] and will only be accepted from the on-site waste recycling facility (permit ref EPR/WE7732AB/A001).

The specifications below provide the maximum threshold levels of toxic and phytotoxic elements which are allowable within the soils to be placed at the site, to ensure that the placement of soils will not result in environmental pollution or harm human or plant health. They also provide the maximum organic matter content, measured as Loss on Ignition (LOI)

and an acceptable range of pH. To confirm that the soils to be used at the site meet these specifications, they will have been subject to testing.

4.9.2 Non-extractive materials

The following waste types have been identified by the Environment Agency as suitable for use in the restoration of mineral workings and as general fill material (Environment Agency Guidance: Waste Recovery Plans and Permits: October 2016). Additional waste types requested are highlighted thus.

5.0 SITE OPERATIONS AND WASTE TREATMENT

The landscape restoration plan describes how the quarry will be restored to existing contours once extraction has been completed. A section alongside the A12 will be progressively restored to levels that existed prior to the construction of the trunk road. The restoration of the quarry by the importation of suitable backfill to original (predevelopment) contours will ensure that there are no long-term stability issues associated with mineral development following quarrying operations.

5.1 Operational hours

Other than for workshop and maintenance purposes and emergency use, the normal operating hours of the site will be:

0700 – 1800 Monday to Friday; and

0700 – 1300 Saturday.

The Site will not undertake operations on Sundays, Public or Bank Holidays

5.2 Phasing plan

The restoration of the site will take place progressively during the operation phase of the development and immediately following the final extraction of minerals within Phase 4.

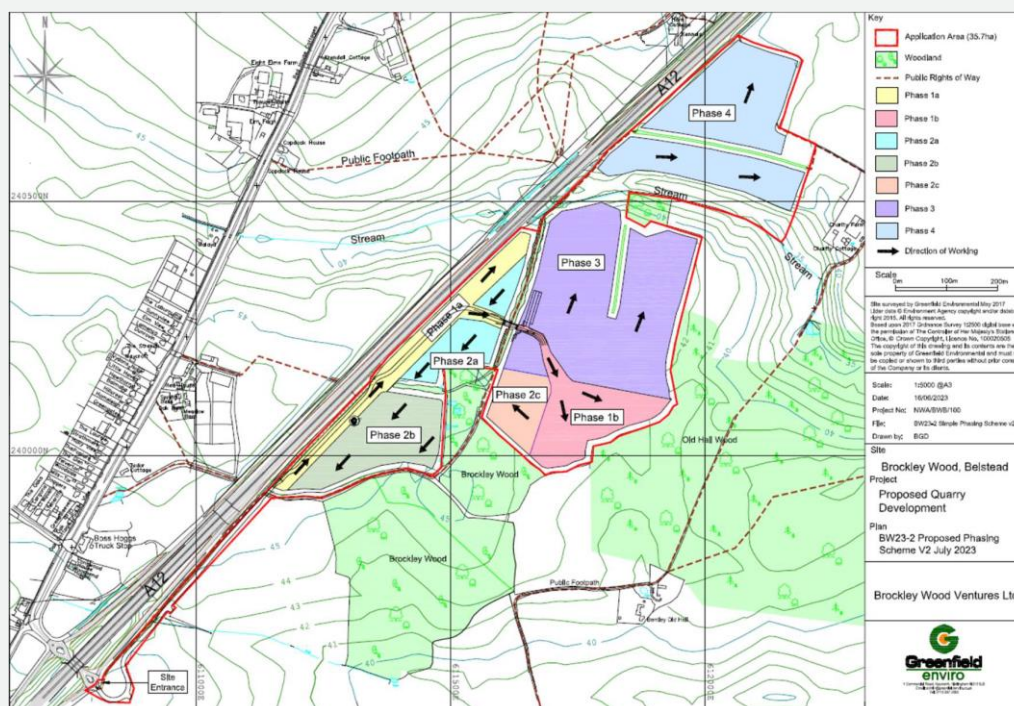


Figure 5-1: Phasing scheme (BW23-2 July 23)

Within each phase replacement of overburden, tipping and compaction will take place as soon as practical following extraction of minerals within that phase. Replacement of soils will only take place after completion of fill to the required formation levels and when appropriate weather and soil conditions permit in accordance with the submitted Soil Resources Assessment and Soil Movements Scheme. This will provide a suitably free drainage growing medium to allow the land to be returned to agricultural use.

The final profiles within each phase of the development are shown in sections A-A to E-E on Dwg Nos BW22-9 Restoration X-sections (South), BW22-10 Restoration X-sections (North) (Proposed Restoration Scheme) and on Dwg No.BW22-8 Restoration Contours. The proposal provides for the restoration of landform to its current contours adjusted so as to facilitate post restoration drainage to field edge ditches. The only exception is within the Phase 2a area which was subject to substantial excavation as part of the construction of the A12 diversion in the 1980's resulting in significant lowering of land levels. In this area, the bund and associated landscaping will be retained and levels over the Phase 2a area to the east will be raised to approximate the historic contours within this part of the site. The cross sections for this area are shown in BW22-3 A12 X-section.

On completion of mineral extraction within Phase 4, restoration of the Phase 4 area, plant area and haul road will remain to be undertaken. Consequently, there will be a period estimated at 2-3 years when the importation and process of inert waste will continue to enable this to be achieved. The operation of waste processing and wash plant will continue until the plant site is restored with final filling of the plant site and haul road undertaken by direct tipping and restoration of soils.

Table 5-1: Extraction phase details

Phase	Estimated saleable reserves (t/yr)	Annual estimated extraction rate	Phase life (yrs)	Estimated completion year
1a	189,000	186,626	0.98	1
1b	330,000	186,626	1.8	2

2a	134,000	186,626	0.72	3
2b	333,000	186,626	1.78	4
2c	154,000	186,626	0.82	5
3	978,000	186,626	5.25	10
4	653,000	186,626	3.5	15

5.3 Construction (pre-operational) phasing plan

5.3.1 Phase 1a

Phase 1a involves construction of the first stage of the haul road linking the access road and plant area together with the formation of the screen bund adjoining the A12.

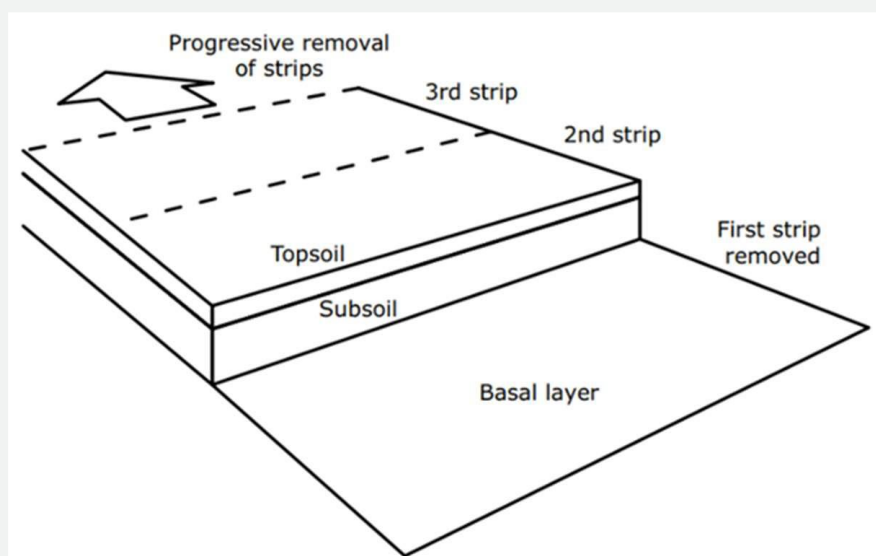


Figure 5-2: Soil stripping (courtesy of the Institute of Quarrying)

The siting of portacabin offices with adjoining weighbridges and office car park with floodlighting will follow in order to establish an 'operational base'.

In order not to sterilise mineral deposits, localised extraction of minerals will take place within the Phase 1a area in advance of construction work. This will be preceded by soil stripping and removal of overburden. The overburden will be used as fill and the haul road constructed above this at a level approximately 1m below existing ground levels. The roadside bund will

be constructed to approximately 3m above existing ground levels adjoining the A12 using the overburden and surfaced in subsoil and topsoil to provide a suitable growing medium.

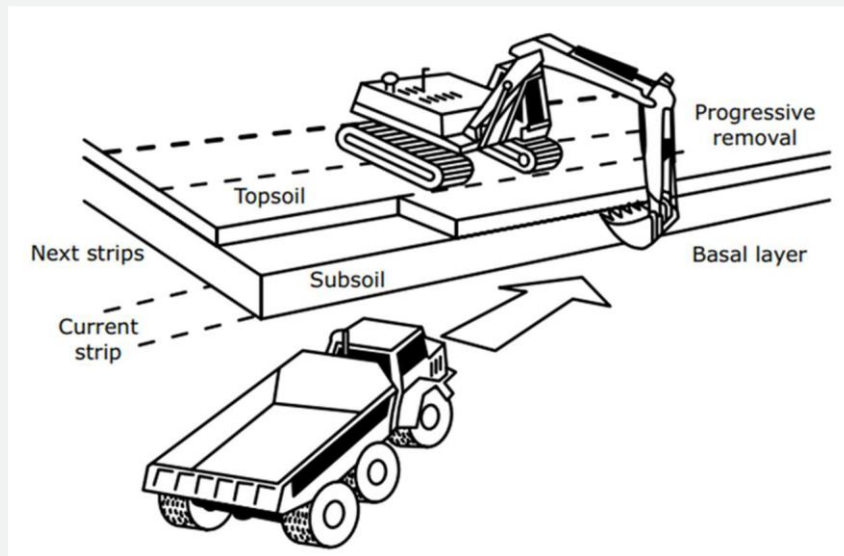


Figure 5-3: Topsoil stripping (courtesy of the Institute of Quarrying)

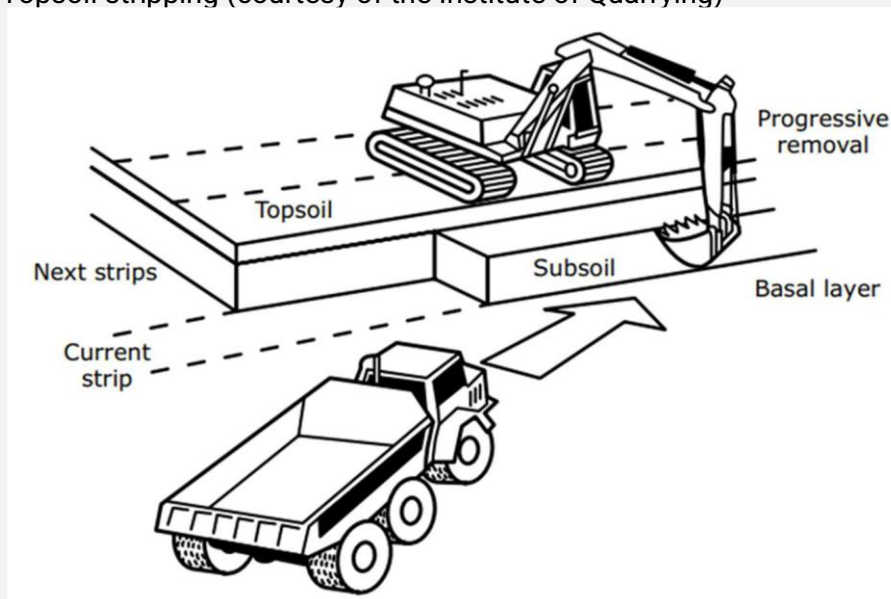


Figure 5-4: Subsoil stripping (courtesy of the Institute of Quarrying)

The first stage of the haul road follows an alignment which is initially 7 -10 m away from the A12 boundary before passing behind the screen bund and then turning east to cross the central trackway at a point where the adverse impact on existing trees can be minimised. Sections showing the extent of cut and fill involved in this phase are illustrated in Dwg No. BW22-3 A12 X-section in figure 2-5.

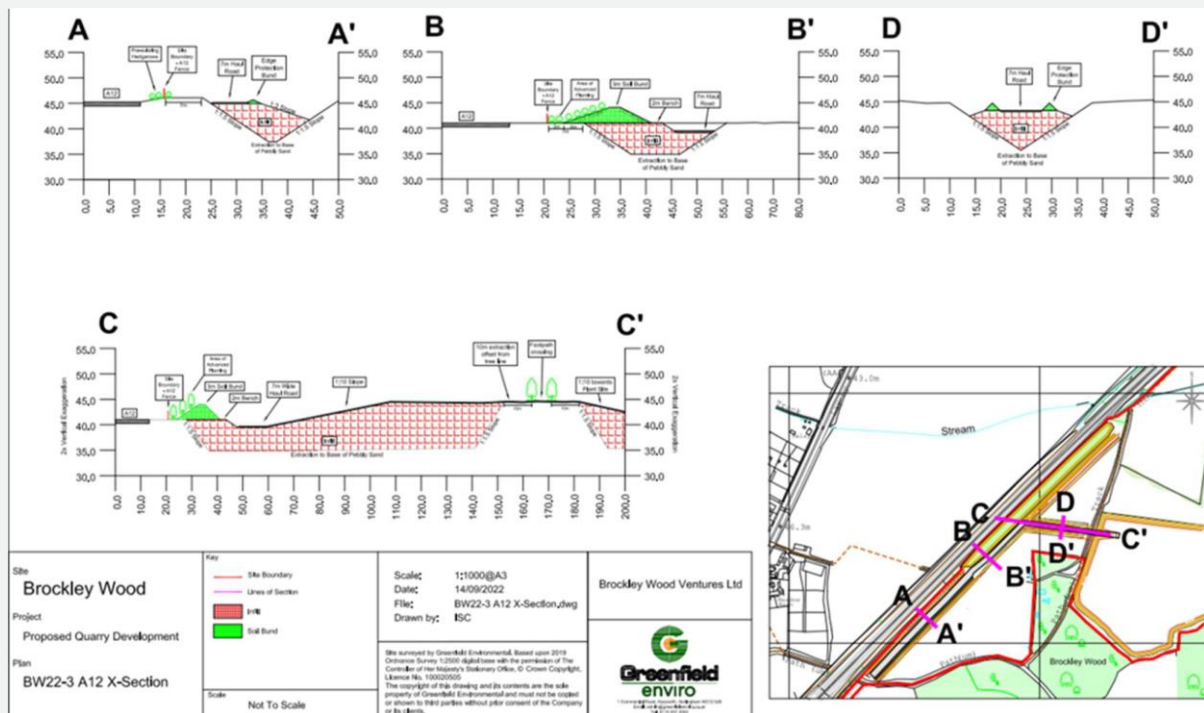


Figure 5-5: Phase 1a extent of cut and fill adjacent to the A12.

The road will generally have a minimum width of 7 m and will be constructed from aggregate that complies with the [Quality protocol: aggregates from inert waste - GOV.UK](https://www.gov.uk/guidance/quality-protocol-aggregates-from-inert-waste). It will then be consolidated and will be permeable and free draining. Where the road crosses the central trackway and for 10 m on either side, the road will be at grade and will have a no-dig construction as recommended in the Arboricultural Assessment and maintained on the line of footpath FP27 to avoid undue disruption of the surface for pedestrians.

Landscaping of the A12 boundary adjoining Phase 1a will take place in the first planting season following the Phase 1a construction works. This will involve the formation of a roadside hedgerow approximately 700 m in length and planting of the eternal, western slope of the bund adjoining Phase 2a.

5.4 Phase 1b

The treatment plant site occupies an area of approximately 4.0 ha centrally located within the site adjoining the southern boundary between Brockley Wood and Old Hall Wood. Phase 1b involves extension of the haul road to the east of the central trackway, provision of wheel-wash facilities for exiting vehicles and the excavation of the eastern part of the plant site (circa. 2.6 ha) following stripping of topsoil and subsoils.

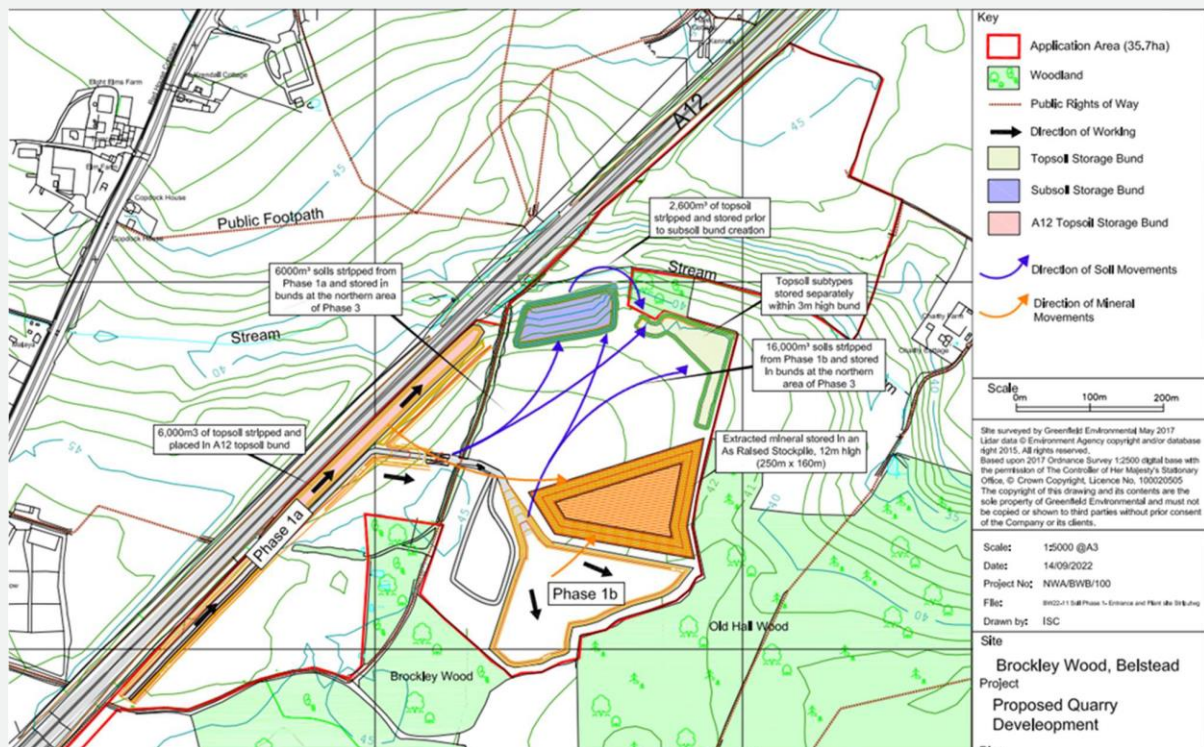


Figure 5-6: Phase 1b layout (BW23-11 Soil [phase 1-entrance and plant site strip])

The floor of the plant site will be created by backfilling the void with overburden surface with consolidated aggregate at a level of 38.5 m AOD which is between 3.5 – 6.5 m below existing surrounding ground levels.

Following stripping of topsoil and subsoil, the raised aggregate from the Phase 1 site operations will be stored in a stockpile immediately to the north of the Phase 1b area screened by Old Hall Wood to the east, Brockley Wood to the west and boundary hedgerows to the north-west and north. The eastern part of the Phase 1b will be used for the formation of lagoons for recycled water from the wash plant, silt settlement, receiving water and freshwater. The western part of Phase 1b will be used for the siting of the wash plant with storage silos to the south, both of which will be on a concrete base. There will be a circulation area around the wash plant facility for HGV traffic and for the operation of loading and unloading vehicles.

To minimise stockpiling, the processing of inert waste will take place initially at the upper level of the western part of the plant site area, following the stripping of topsoil and subsoil. The waste processing plant will include a Trommel, Powerscreen screener and a Terex crusher and will be accessed by a temporary spur leading from the haul route to the western part of

the plant site. This area will also accommodate a temporary lorry park for the operator's haulage vehicles.

The plant site area will be enclosed by a 2.0 m high security fence erected on the upper level surrounding the working area. This will be inside the boundary trees and on the northern boundary it will follow the edge of the working area with gates at the points where it meets the haul road. The security fence will be adjusted to accommodate the change in levels when excavation of the Phase 3 area to the north commences. Additional landscaping will be undertaken to strengthen the boundary hedgerow linking Brockley Wood and Old Hall Wood.

5.5 Phase 2c

The construction phase of the proposed development will overlap the commencement of operational activities relating to the extraction of minerals and processing of inert waste. Phase 2c completes work on the formation of the plant site area which is anticipated will commence once extraction of minerals within Phases 2a and 2b has been substantially completed. Excavation of this area will be undertaken incrementally with extracted minerals processed within the adjoining waste and wash plant without interim stockpiling and then either exported off-site or used for retail sales from the site.

The soil manufacture and inert waste processing plant will be relocated to similar positions at the lower level which will be formed in the same way as Phase 1b at 38.5 m OD. The proposed layout and interim profile of Phase 2c is illustrated in the plan and section shown in BW22-7 Plant Site Final Layout X-sections.

The final layout of Phase 2c will be accessed solely from the haul road at the lower level and there will be a circular route around the waste processing plant for vehicles using the workshop, lorry park and bagging building as well as for loading vehicles. Steps will be provided on the western boundary of the plant site area connected to a footpath at the upper level adjoining the western boundary of Phase 3, which will have lower-level lighting and will provide pedestrian access for staff between the plant site area and the site office.

5.6 Operational phasing

5.6.1 Phases 1a - 4

Based on borehole testing undertaken by Greenfield Enviro it is estimated that the application site contains some 2,771,000t net of saleable sand and gravel deposits. The void created by extraction of those minerals will be partly filled by the overburden, topsoil and subsoil from within each phase but will leave a residual requirement for a total volume of 1,714,000 m³ which, when using a bulk density conversion factor of 1.7t/m³, equates to approximately 2,913,800t of imported fill to backfill the site and achieve the full design agreed finished contours as required by the planning permission.

The position relating to the volume of sand and gravel, overburden, soils and inert fill in respect of each phase is set out in the agreed Waste Recovery Plan.

The estimated rate of extraction per annum and length of extraction in respect of each phase is set out in the table 2-3. Based on these estimates, it is expected that the quarry will have an overall life of 15 years with the Phase 1a and 1b construction works being completed within 2 years and the completion of the Phase 2c construction work between year 2 and year 5. Access road construction will take place in parallel with the commencement of work on phases 1a and 1b, but the access road will not be used for either the export of aggregates or the import of waste other than for construction purposes until the work on the road is completed.

There will be a period of 2-3 years following completion of mineral extraction for the filling of the remaining void space and restoration of the site. All programme estimates are dependent on supply and demand which may vary over the life of the quarry.

In order not to sterilise viable minerals, the operational extraction of minerals will run in parallel with the construction phase as it is a prerequisite of the construction works. However, export of aggregates and concrete as well as retail sales from the site will not commence until the access road has been completed. Following completion of Phase 1b sand and gravel deposits across the site will be extracted in accordance with the phased programme shown in the Phasing Master Plan below. In each phase, including the construction phase, topsoil and subsoil will be stripped and stored prior to the commencement of other operations, including stockpiling and bunding, and the use of dumper access routes.

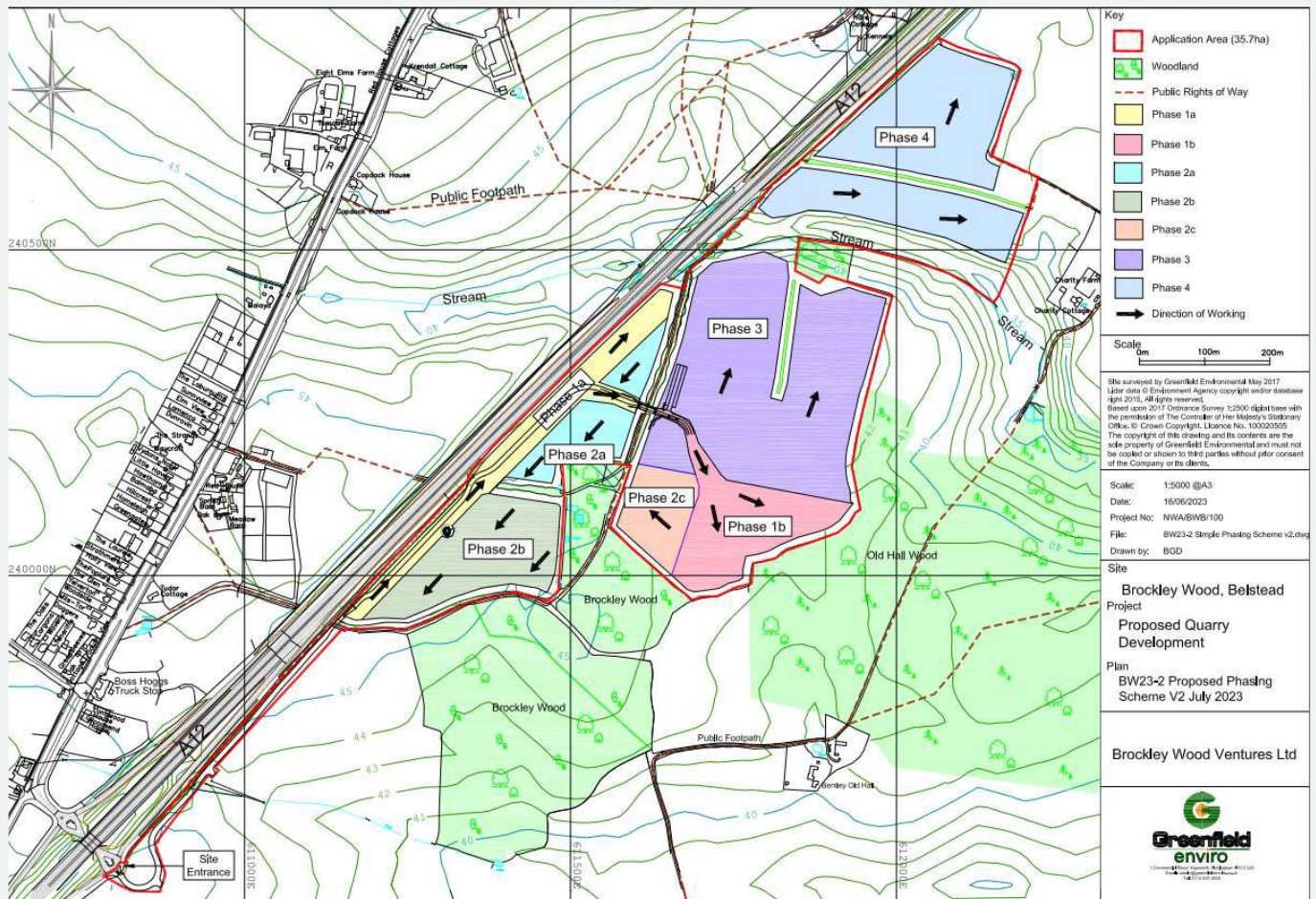


Figure 5-7: Phasing scheme masterplan

The northern extremity of the Phase 4 area forms part of the current draft route for part of the Bury St Edmunds to Colchester Water Pipeline. If it emerges that there will be conflict between the pipeline proposals and the application proposals, it may be necessary to considering revised phasing arrangements to allow minerals to be extracted from within the affected area in advance of the current programme.

5.7 Material stockpiling

During the preliminary excavation process the overburden, consisting of topsoil and subsoil will need to be stripped to reveal the sand and gravel strata. So that it can be reused during the restoration phase it will be stored in large, temporary stockpiles to reduce the surface area occupied, and to prevent damage from the weather and other construction activities.

The main aim when temporarily storing soil in stockpiles will be to maintain the soil quality and minimise damage to the soil's physical (structural) condition so that it can be easily

reinstated once respread. In addition, stockpiling soil will not cause soil erosion, pollution to watercourses or increase flooding risk to the surrounding area.

As it is planned that the stripped soil will be stored for longer than a few weeks, it is understood that the soil in the core of the stockpile will slowly become anaerobic and certain temporary chemical and biological changes take place. However, these changes are usually reversed when the soil is respread to normal depths, although the time it takes for these changes to occur very much depends on the physical condition of the soil.

Storage of soils will take place in temporary bunds using dump trucks and excavators in accordance with DEFRA guidance and best practice [Code of practice for the sustainable use of soils on construction sites - GOV.UK](#) as set out in the soil handling method statement. The movement and temporary storage of soils within the site will take place in a phased programme in accordance with Report 1882/1 – Soil resources and agricultural quality of land at Brockley Farm, Ipswich. The overburden will then be removed to allow extraction of the viable mineral deposits by a hydraulic excavator which will take place periodically on a campaign basis. The overburden will be used to progressively fill the void created and will form the base on which further imported inert waste can be deposited and compacted to achieve the required formation levels. Subsoil and topsoil will then be placed at the upper levels in accordance with the Soil Resources Report and the Soil Handling and Soil Movements Scheme during the summer months.

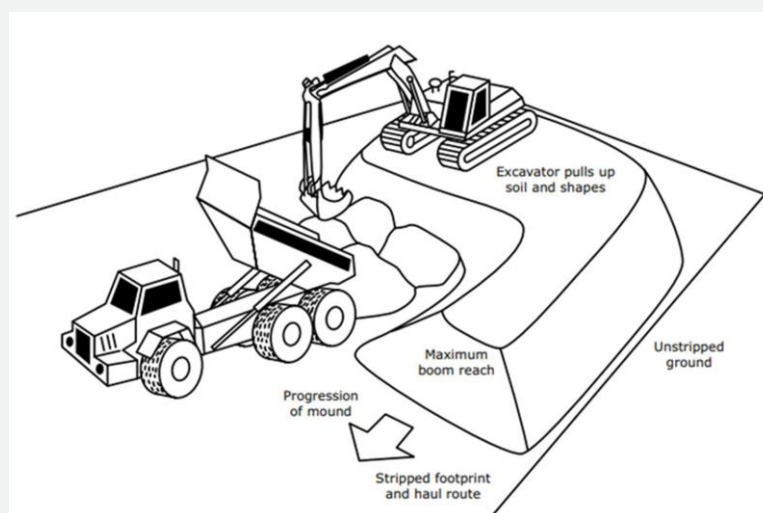


Figure 5-8: Soil stockpiling (courtesy of Institute of Quarrying)

6.0 ENVIRONMENTAL RISK ASSESSMENT

The Environmental Setting and Site Design (ESSD) report, together with the Hydrogeological Risk Assessment (HRA), constitutes a site-specific risk assessment.

6.1 Management system

Brockley Wood Ventures Limited will operate their own 'in-house' management system which will ensure that:

- The risks that the activities pose to the environment are identified.
- The measures that are required to minimise the risks are identified.
- The activities are managed in accordance with the management system.
- Performance against the management system is audited at regular intervals; and
- All environmental permits requirements are complied with.

The management system will be supplemented by this document which outlines the proposed operating techniques at the site and demonstrates conformance with the requirements of relevant and published [Risk assessments for your environmental permit - GOV.UK](#) guidance.

6.2 Management structure and responsibilities

The Site Manager (SM) will be responsible for normal day to day operations and ensuring compliance with the environmental permits that cover the activities carried out on site.

Whenever the site is open to receive or dispatch wastes, or is operating any of the waste management activities, supervision will be provided by at least one member of staff who is suitably trained and fully conversant with the requirements of the permit regarding:

- Waste acceptance and control procedures.
- Operational controls.
- Maintenance.
- Record-keeping.
- Emergency action plans; and
- Notifications to the EA.

6.3 Technical competence and training

The site will be managed by sufficient staff who are competent to operate the site. The management system will ensure that:

- All staff will have clearly defined roles and responsibilities.
- Records will be maintained of the skills required for each post.
- Records will be maintained of the training and relevant qualifications undertaken by staff to meet the requirement of each post; and
- Operations will be governed by standard operating procedures (SOPS).

Operations at the site will be under the overall control of a Technically Competent Manager (TCM) who holds the relevant Certificate of Technical Competence (CoTC) under the Waste Management Industry Training and Advisory Board (WAMITAB) scheme.

An assessment of staff training needs will be carried out to identify the positions for which specific environmental awareness training is needed, and to determine the scope and level of such training. The assessment of training needs will be reviewed on an annual basis.

The training programme will ensure that relevant staff are aware of the following:

- Regulatory implications of the EP for the site and their specific work activity.
- All potential environmental effects from operations under normal and abnormal circumstances.
- The need to report deviations from the permit; and
- Prevention of accidental emissions and action to be taken should accidental emissions occur.

6.4 Site permit

A copy of the permit and the management system will be kept available for reference by all staff and contractors whose work could impact upon the environment.

6.5 Site security

So that unauthorised access is prevented, several site security measures will be in place including:

- Fencing along the site boundary; and

- A gate located at the entrance to the site, which will be locked when the site is closed.

The site will be inspected at the beginning of each working day. Any defects or damage which compromises the integrity of the security measures will be made right by temporary repair by the end of the working day.

Permanent repairs will be fitted within 5 working days.

All inspections, any defects, damage or repairs will be recorded in the site diary.

6.6 Managing documentation and records

Controls will be in place to ensure that all documents are issued, revised and maintained in a standardised arrangement.

The documents that will be included within the scope of the controls are as follows:

- Policies.
- Responsibilities.
- Targets.
- Maintenance records.
- Procedures.
- Monitoring records.
- Results of audits.
- Results of reviews.
- Complaints and incident records; and
- Training records.

Operational records will be produced and kept up to date daily to reflect waste movements, both internally and off-site.

All records relating to the waste acceptance will be maintained and kept on-site for a minimum of two years.

6.7 Reporting non-compliance and taking corrective action

Procedures in place will ensure appropriate corrective action is taken in response to problems identified at the site. The procedure will ensure that non-conformances are reported, investigated and rectified, and that failures and limitations are prevented.

The following aspects will be considered:

- Actual or potential non-compliance.
- System failure discovered at internal audit.
- Suppliers or subcontractors breaking agreed operating rules.
- Incidents, accidents, and emergencies.
- Malfunction, breakdown or failure of plant.
- Other operational system failure; and
- Complaints.

The action taken in response to the non-conformance will include, but not limited to:

- Obtaining additional information on the nature and extent of the non-conformance.
- Reviewing and testing alternative solutions.
- Adjusting procedures and responsibilities.
- Requesting approval for additional resources and training; and
- Contacting suppliers and contractors (as applicable).

6.8 Compliance checking

There will be a formalised internal assessing procedure to ensure the site is reviewed at regular intervals and that the progress of corrective and preventative action is checked.

Operational control, preventative maintenance and calibration

The management system will work alongside operational procedures to ensure effective control of site operations, the use of approved suppliers and contract services, the maintenance of operational equipment and the calibration of any monitoring equipment.

All plant and equipment will be subject to a programme of planned preventative maintenance which will follow the inspection and maintenance schedule recommended by the manufacturer.

6.9 Design and constructions

All appropriate elements of the site which are not currently constructed will be designed in accordance with recognised standards, methodologies and practices. The design process will

use a risk-based approach and will be appropriately documented using drawings, specifications and method statements to provide an adequate audit trail.

Construction Quality Assurance (CQA) plans will oversee all construction activities necessary in the future. All CQA plans will be prepared by competent and suitably qualified persons. A competent and suitably qualified person will supervise the construction activities.

6.10 Accident Management Plan

Brockley Wood Ventures Limited recognises the significance of the avoidance of accidents that could have environmental impacts and that it is essential to restrict those consequences as far as possible.

An Accident Management Plan [AMP] will be put into operation and maintained at the site to make sure that site staff are fully prepared for any such incidents. The AMP will be reviewed at least every four years or as soon as practicable after an incident, with any changes made to further reduce the risk of incidence.

The following AMP describes the techniques that will be implemented to minimise the risks posed to the environment. Activities affecting the health and safety (H&S) of operatives, contractors and visitors will be separately managed in compliance with H&S regulations and company H&S Policy.

6.11 Hazard identification

The following hazards were identified in the Environmental Risk Assessment included in the permit application:

- Unauthorised waste.
- Equipment fire.
- Spillage and leakage.
- Security and vandalism; and
- Flooding.

The following sections summarise the processes which will be used to reduce the possible causes and impacts of accidents at the site.

6.12 Unauthorised waste receipt and processing

Accepting unpermitted waste materials to the restoration operation could have detrimental consequences upon the environment. These impacts include risks connected with odour and the potential contamination of land and water.

To control this risk, only those waste that pass the acceptance criteria will be accepted for recovery. All wastes will be subject to inspection and checking against the declaration on the waste transfer note. Documentation will accompany all waste material accepted. Should unauthorised waste be discovered at the site, the waste will be segregated and stored in a designated quarantine/isolation area prior to transfer from site.

6.13 Equipment fire

In the unlikely event of a fire, the following actions will be taken:

- The site manager will be informed immediately.
- The fire & rescue service will be notified immediately and the EA as soon as practicable.
- The burning item/area will be isolated and attempts to extinguish the fire utilising the on-site fire extinguishers will be made if safe to do so; and
- The site and buildings will be evacuated if the fire is not containable.

6.14 Loss of containment – Spillage and leakage

Loss of containment could lead to spillage and leakage of potentially contaminating liquids, e.g., fuel oil. To stop loss of containment and reduce the risk and impact of releases the following measures will be put in place:

- Containment system: any facilities for the storage of oils, fuels or chemicals will be sited above ground on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound will be at least the equivalent to the capacity of the largest tank plus 10% or 25% of the total tank volume within the bund, whichever is the greater. All filling points, vents and gauges associated with the tanks will be located within the bund.
- Storage tanks: storage tanks will be constructed to the appropriate British Standard.

- Inspection: a daily, visual inspection of tanks by site staff to ensure their continued integrity, and to identify the need for any corrective action.
- Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on-site; and Monitoring techniques: the site staff will undertake daily monitoring for evidence of spillage and leakage.

In the event of any potentially polluting leak or spillage occurring on-site, the following action will be taken:

- Minor spillages will be cleaned up immediately, using sand or proprietary absorbent. Any contaminated materials will be put into containers and transferred from site to a suitably permitted facility. The incident will be logged in the site diary.
- Dry wastes dropped on-site will be collected and taken to the appropriate area of the site.
- In the event of a major spillage, which is causing, or is likely to cause, polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from entering surface water or drains. The spillage will be cleared immediately and placed in containers for off-site disposal. The EA will be informed.

6.15 Security and vandalism

The site will have the following security measures in place to prevent unauthorised access and vandalism:

- Site perimeter: the site will benefit from fencing around the perimeter.
- Security gates: the site access gate will be locked when the site is not in use.
- Inspection: the gate and fencing will be regularly inspected by the staff to identify any deterioration, damage or the need for any repairs.
- Maintenance and repair: the site fencing and access gate will be maintained to ensure their continued operation. Should any damage be detected, repairs will be made by the end of the working day. If this is not possible, suitable measures will be taken to prevent any unauthorised access to the site and permanent repairs will be affected as soon as practicable and within 5 days.

- Authorised access system: all visitors to the site will be required to sign in in the visitor's book and then sign out on leaving the site to minimise the risk of unauthorised visitors being present on-site.
- Monitoring techniques: operational procedures, including regular inspections, will ensure continual monitoring of security provision at the site. In the event of a breach of security, the cause will be investigated, and suitable mitigation measures put into effect; and
- Reporting: records to be maintained include inspections and maintenance of security fencing and the gate, breaches of security, investigations and actions taken.

7.0 RISK MITIGATION

A Hydrogeological Risk Assessment (HRA) has been prepared in support of the Bespoke Environmental Permit Application for a deposit for the purposes of recovery activity application. The HRA was prepared with due regard to the Environment Agency guidance on what to include in a HRA, published in January 2020 and updated 17th January 2024.

The design of the proposed site and background information regarding the site setting are provided within the Conceptual Model, Environmental Setting and Site Design (ESSD) report (Hafren Water, 3777/ESSD dated March 2025), which should be read in conjunction with this report.

8.0 CONTROL AND MONITORING

The risk assessment demonstrates that, due to the nature of the waste to be generated and the proposed mitigation measures, there will be no significant risk from leachate, particulate matter, mud, odour, noise/vibration or accidents at the site. Therefore, no quantitative monitoring of these parameters is proposed.

Greenfield Environmental was commissioned by NWA Planning Ltd, acting on behalf of Brockley Wood Ventures Ltd, to produce a surface water and flood risk assessment of the proposed mineral development on land at Brockley Wood, Belstead, Suffolk. The report, 'A Surface Water & Flood Risk Assessment for Proposed Minerals Development on Land at BROCKLEY WOOD, Belstead, Suffolk (BWV/BW/100)' proposed that the excavation will extend down to no lower than 34m AOD. However, it is proposed that no extraction will take within 0.5m above the highest recorded groundwater level at any point on the site. There will thus be no requirement for any dewater operations to extract the proven mineral deposits. This was a condition of the land coming forward as an allocated site in the recently published Suffolk Minerals Local Plan.

The following sections, 8.1 to 8.2 are taken directly from this report.

8.1 Surface water

A stream crosses the northern part of the site, entering the site on the north-west side from a culvert under the A12 and flowing eastwards across this part of the site (see Plan W22-2 and Plates 1 and 2 in the report). The culvert also collects surface water runoff from the A12 and this issues across a ford where a footpath crosses the stream (see Plate 3 in the report). To the east of the A12 road culvert, an agricultural crossing is present, as shown in Plates 4 and 5 and Plan WS22-4 in the report. This comprises a piped culvert across which all the farm machinery (tractors/ combines etc.) cross from the proposed "Phase 3 area" into the "Phase 4 area".

There is also a stream in the southern part of the application area that lies outside of the proposed quarry extraction area. This stream is crossed by the existing agricultural access road from the A12 roundabout that provides the only access for the farmer. The location of

the stream is shown in Plans W22-2 and W22-3 with the detail of the stream culvert shown in Plan W22-5 and in Plate 6 in the report. This stream flows eastwards beneath the A12 in a culvert with a sluice control adjacent to the agricultural access as shown in Plate 7 in the report.

These two easterly flowing streams that are present within the application area both converge just to the east of Old Hall Wood (see Plan W22-6 in the report) where the stream then flows south-east into the Alton Reservoir approximately 2km from the site.

8.1.1 Surface water management

During the quarry operations, all the surface water run-off will be contained within the site boundaries with no off site discharge of any water proposed during the lifetime of the quarry development.

All surface water run-off will be directed into drainage ditches adjacent to the main haul roads and within the sand and gravel extraction areas where sumps/ soakaways will collect the water.

The processing plant will be constructed about 5m below ground level within the initial quarry void, thus all surface water run-off will be directed into the silt lagoons where it will be used to maintain water levels for use during the quarry operations.

The existing surface water drainage system will be unaffected by the minerals proposals other than the creation of enlarged crossing points, thus there is no requirement for any additional surface water management as part of the mineral development. As part of the proposed quarry development there will be no impermeable surfaces constructed, other than in the plant area. However, as stated above, all surface water run-off will be directed into the wash plant lagoon system.

As all surface water run-off will be collected within the wash plant lagoon system at the base of the quarry workings (5m below ground level). This configuration together with the general excavation void created during of the sand and gravel extraction will create a natural “SuDs” system for all surface water run-off within the quarry workings.

There is no requirement for any surface water treatment or discharge from the site.

8.2 Groundwater monitoring

As the site will be operated as a deposit for recovery (DfR) site, there is no automatic requirement for monitoring.

However, groundwater monitoring has been carried out as the site is considered to be in a sensitive location due to the presence of a down-gradient drinking water abstraction.

No groundwater was encountered during the 2017 drilling investigation. During the 2021 investigation, groundwater was encountered in boreholes BW11 to BW20. The lowest elevation water strike to occur during drilling was at 32.88m AOD in BW14 and the highest water strike was at 35.2m AOD in BW11.

Water monitoring standpipes have been installed in three boreholes BW15W, BW17W and BWG-B, as shown in Plan W22-7. Groundwater levels within the site are monitored in three boreholes (BWG-B, BW15W, BW17W).

Monitoring of these boreholes indicates that the groundwater on the site generally lies between 33.5m to 34m AOD.

It is considered that the existing monitoring network does not provide sufficient coverage to enable monitoring of all phases of infilling. Therefore, the installation of additional monitoring boreholes has been proposed. The proposed monitoring network is summarised in Table 3777/HRA/T7 and their locations shown on Drawing 3777/HRA/04.

Table 8-1: Proposed groundwater monitoring network

Borehole	Coordinates	Status	Relative position
BWG-B	611500, 240316	Existing	Up-gradient
BW17W	611756, 240516	Existing	Up-gradient
BW15W	611772, 239992	Existing	Down-gradient
GW25/01	612178, 240499	Proposed	Down-gradient
GW25/02	611948, 240291	Proposed	Down-gradient
GW25/03	611469, 239976	Proposed	Down-gradient
GW25/04	611150, 239932	Proposed	Up-gradient

GW25/05	612127, 240795	Proposed	Up-gradient
----------------	----------------	----------	-------------

Table 8-2: Recommended monitoring schedule

Frequency	Parameter
Quarterly	Groundwater level pH, electrical conductivity (EC), chloride (Cl), ammoniacal nitrogen (NH ₃), cadmium (Cd), antimony (Sb)
Annually	Groundwater level pH, electrical conductivity (EC), total oxidised nitrogen (TON), total organic carbon (TOC), alkalinity, chloride (Cl), ammoniacal nitrogen (NH ₃), sulphate [SO ₄] ²⁻ , calcium (Ca), sodium (Na), magnesium (Mg), potassium (K), lead (Pb), copper (Cu), zinc (Zn), chromium (Cr), iron (Fe), manganese (Mn), cadmium (Cd), nickel (Ni), antimony (Sb), PAH (EPA 16)

8.3 Noise monitoring

Sharps Redmore (SR) were instructed by Brockley Wood Ventures Ltd to prepare an environmental noise assessment, Brockley Wood, Belstead, Proposed Quarry Assessment of Sound Levels (22nd September 2022 - 2120502) to accompany the planning application for a quarry to extract sand and gravel with associated processing operations at Brockley Wood, Belstead, Suffolk.

This Technical Report considers the potential impact of sound emissions during extraction and restoration on existing residential properties in the vicinity and should be read in conjunction with this MWMP. A description of the area, including the identification of noise sensitive receptors (NSR's) is included in Section 4.0 of the report.

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 are provided in Section 6.0 of the report.

As part of the Noise Monitoring Plan (NMP) it is proposed to carry out a regular noise monitoring at noise sensitive receptors around the site. The following outlines details of the noise monitoring scheme, which includes details of how and when noise would be measured, monitoring locations, and reporting of results.



Figure 8-1: Survey locations

Table 8-3: Noise monitoring locations

Reference	Receptor
NSR1	Tudor House, Old London Road, Copdock
NSR2	Red House, Old London Road, Copdock
NSR3	Hare Cottage, Copdock, IP8 3JS
NSR4	Crope Hall, Charity Lane, Belstead
NSR5	Charity Farm, Charity Lane, Belstead
NSR6	Bentley Old Hall, Old Hall Lane, Bentley

8.4 Noise measurement

Noise levels during operation of the site shall be measured during attended monitoring by a competent person using a sound level meter which conform to BS EN 61672-1 Class 1. All equipment should have a valid calibration certificate.

The measurement microphone and/or meter shall be positioned at 1.5 metres above local ground level, in freefield condition away from any buildings. A field calibration check shall be performed on the measurement system before and after the survey. Details of the field calibration check should be recorded.

The LAeq,T sound level shall be sampled by the meter for a total period of one hour at each monitoring position. Measurements within the hour shall be recorded at 10-minute intervals. Extraneous events such as bird song, or aircraft noise shall be paused/filtered out of the measurements as far as possible. Details of any events 'paused' out should be noted.

Noise levels should be sampled during the working hours of the site. Monitoring shall be scheduled as far as reasonable possible when the weather conditions are dry and free of precipitation, fog and excessive wind (more than 5m/s). Details of the weather should be determined from site observations and recorded along with site results.

Noise levels should be recorded at 6-month intervals for the life of the workings.

Where due to extraneous noise sources, such as road traffic noise, it is not practicable to determine operational noise levels from site measurement at the noise monitoring location, then measurements will be carried out at a surrogate location closer to noise source and the noise level at the receptor calculated. In such cases the method of calculations shall be reported in detail.

If monitoring shows compliance for the closest/noisiest phases of working, then site operator may seek written approval from Suffolk County Council to cease the monitoring programme.

8.5 Result assessment

The permitted levels of routine site-attributable noise will be determined having regard to the national planning guidance ([Minerals - GOV.UK](https://www.gov.uk/minerals)) which provides advice on the assessment of environmental impacts from minerals extraction.

Following completion of each survey, a report will be prepared including full details of the survey results, details of monitoring equipment, weather conditions and in the event that compliance with the agreed noise criterion is not achieved, details of the cause of the exceedance (if apparent) and the steps taken to investigate and remedy the situation.

The results shall be forwarded to site operator and the planning authority within fourteen working days of completion of the survey.

9.0 PROPOSED PLAN FOR CLOSURE

The restoration of the site will take place progressively during the operational phase of the development and immediately following the final extraction of minerals within Phase 4. Within each phase, replacement of overburden and tipping and compaction will take place as soon as practical following extraction of minerals within that phase. Backfilling of soils will only take place after completion of fill to the required formation levels and when appropriate weather and soil conditions permit in accordance with the Soil Resources Assessment and Soil Movements Scheme. This will provide a suitably free drainage growing medium to allow the land to be returned to agricultural use.

The final profiles within each phase of the development are shown in BW22-9 Restoration X-sections (South), BW22-10 Restoration X-sections (North) and BW23-8 Restoration Contours. The proposal provides for the restoration of landform to its current contours adjusted to facilitate post restoration drainage to field edge ditches. The only exception is within the Phase 2a area which was subject to substantial excavation as part of the construction of the A12 diversion in the 1980's resulting in significant lowering of land levels. In this area, the bund and associated landscaping will be retained and levels over the Phase 2a area to the east will be raised to approximate the historic contours within this part of the site.

On completion of mineral extraction within Phase 4, restoration of the Phase 4 area, plant area and haul road will remain to be undertaken. Consequently, there will be a period estimated at 2-3 years when the importation and processing of suitable waste streams will continue to enable this to be achieved. Within the plant site, the operation of waste processing and wash plant will continue until the plant site is restored with final filling of the plant site and haul road undertaken by direct tipping and restoration of soils.

9.1 Ecology and Landscape Management Plan

The Ecology and Landscape Management Plan (E&LMP) sets out measures designed to maintain and enhance biodiversity across the site and adjoining woodland under the control of the applicant company over the life of the quarry and for a period of 5 years following cessation of quarry operations. It will govern the implementation of the approved landscaping

scheme in accordance with a phased programme and measure undertaken annually relating to the cultivation, weeding and management of landscaped areas and the phased introduction of measure to mitigate ecological impacts and to enhance long-term biodiversity across the site.

9.2 5-Year aftercare plan

The 5-Year Aftercare Plan will incorporate the E&LMP but will also address those areas of the site intended to be returned to agricultural use. It will be designed to return all areas within the site other than those which form woodland, wooded trackways, field boundaries or agricultural access tracks to arable farmland and will include measure relating to:-

- replacing retained soils and subsoils to appropriate depths and profiles
- facilitating drainage of restored areas by provision of drainage ditches
- maintenance of field profiles
- cultivation, weeding and treatment of restored areas
- monitoring, recording and, where necessary, modifying aftercare measures.

9.3 Closure

After mining waste operations have ceased at the site, the Environmental Permit will continue to be in force to control the ongoing pollution risks associated with the mining waste facility. Monitoring of the mining waste facility, and associated restoration activity, will continue until such time as it is considered that the mining waste facility no longer poses a risk to the environment or human health and the restoration and aftercare has been satisfactorily carried out.

When it is demonstrated that the mining waste facility no longer poses an unacceptable risk to the environment or human health, an application will be made to surrender the permit.

10.0 POLLUTION PREVENTION MEASURES

This section outlines the pollution prevention measures to be implemented during the operation and restoration phases of the mining waste facility at Brockley Wood Quarry. The site is located within a Source Protection Zone 3 (SPZ3) and in proximity to Bentley Old Hall, Bentley Old Hall Barn, Old Hall Wood (east) and local surface watercourses, and as such, the prevention of pollution to groundwater and surface water is a key priority.

10.1 Waste containment and placement

- Only non-hazardous mining waste and imported backfill will be deposited, in accordance with the Waste Acceptance Criteria.
- Both extractive and non-extractive waste will be placed in engineered layers and compacted to reduce voids and infiltration pathways.
- The backfilling operation will be carried out progressively, as extraction progresses, minimising the area of exposed waste at any one time.

10.2 Surface water management

- During the quarry operations, all surface water run-off will be contained within the site boundaries with no off-site discharge of any water proposed during the lifetime of the quarry development.
- All surface water run-off will be directed into drainage ditches adjacent to the main haul roads and within the sand and gravel extraction areas where sumps/ soakaways will collect the water.
- The processing plant will be constructed about 5m below ground level within the initial quarry void, thus all surface water run-off will be directed into the silt lagoons where it will be used to maintain water levels for use during the quarry operations.
- The existing surface water drainage system will be unaffected by the minerals proposals other than the creation of enlarged crossing points, thus there is no requirement for any additional surface water management as part of the mineral development. As part of the proposed quarry development there will be no

impermeable surfaces constructed, other than in the plant area. However, as stated above, all surface water run-off will be directed into the wash plant lagoon system.

- All surface water run-off will be collected within the wash plant lagoon system at the base of the quarry workings (5m below ground level). This configuration together with the general excavation void created during of the sand and gravel extraction will create a natural "SuDs" system for all surface water run-off within the quarry workings.
- There is no requirement for any surface water treatment or discharge from the site.

10.3 Groundwater protection

- Groundwater monitoring boreholes will be installed upgradient and downgradient (see 8.2).
- Monitoring parameters: pH, EC and Potentially Toxic Elements (PTEs) (see 8.2).
- The Source Protection Zone (SPZ) 3, which the site is located within, is considered to be associated with abstractions from the deeper chalk aquifer. These abstractions are not considered to be receptors as the London Clay prevents a pathway linking activities at the site to the underlying chalk aquifer.
- The London Clay, underlying the sand and gravel and the site, is a barrier to vertical flow, therefore it is considered that there is no pathway to the chalk.
- All waste will be placed above groundwater; hence groundwater control or management is not needed during placement of the material or following completion of the work.
- No liquid or hazardous waste accepted.
- Fuel and chemical storage in bunded areas with 110% containment, away from sensitive locations.

10.4 Waste acceptance and control

- All waste will be pre-characterised and checked on delivery.
- Non-conforming waste will be quarantined and removed within 48 hours.
- Waste transfer notes will be maintained.

10.5 Dust and air quality management

- Water bowsers used on haul roads.
- Speed limits enforced and loads covered.
- Visual assessment of dust at site boundary.

10.6 Noise and vibration control

- Operations limited to permitted hours.
- Plant maintained and fitted with white noise reversing alarms.
- Acoustic screening used where necessary.

10.7 Fuel and oil management

- Refuelling in designated areas with impermeable surfaces.
- Spill kits provided and staff trained.
- Regular checks for leaks from equipment.

10.8 Stability and erosion measures

- Temporary slopes formed per geotechnical guidance.
- Restored surfaces seeded for stabilisation.
- Rainfall protocols in place to reduce soil movement.

10.9 Incident and non-conformance management

- EMS in place to log and manage incidents.
- EA notified of pollution incidents or permit breaches.