



Clockhouse Quarry Restoration Environmental Permit Application

Environmental Setting and Site Design

SUEZ Recycling and Recovery UK Limited

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SLR Project No.: 402.065294.00001

11 December 2025

Revision: V1 Final

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
DRAFT	11 December 2025	KH / TH / GW	GS	GS
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1.0 Introduction

1.1 Report Context

SUEZ Recycling and Recovery UK Limited (SUEZ) has instructed SLR Consulting Limited (SLR) to prepare a Deposit for Recovery Environmental Permit (EP) application. The application seeks approval for the use of suitable waste in the restoration of Clockhouse Quarry (the Site), located at Horsham Road, Capel, Surrey, RH5 5JL, as a waste recovery operation under the Environmental Permitting (England and Wales) Regulations 2016.

This Environmental Setting and Site Design (ESSD) report sets out the details of the conceptual model of the site's environmental setting and site design, and it should be read in conjunction with the supporting risk assessments submitted with this EP application.

1.2 Site Details

1.2.1 Site Location and Access

Clockhouse Quarry is a former clay pit associated with the dormant Clockhouse Brickworks covering approximately 26.4 hectares (ha) and can be subdivided into three distinct areas referred to as Area 1, Area 2 and Area 3. The location of each of these areas is shown on Figure 1-1 and a description of each is provided as follows:

- **Area 1:** The south-western area includes a closed landfill the subject of Environmental Permit (EP) reference EPR/CP3994HB (EAWML 19674) operated by SITA (now SUEZ Recycling and Recovery Surrey Ltd) under planning permission MO98/1448. The landfill ceased accepting waste in 2004 with the expiry of the planning permission time limit. Restoration was completed in 2008 in accordance with the requirements of planning permission MO98/1448;
- **Area 2:** The south-eastern area and to the east of Area 1 has been quarried and, although included within the expired planning permission MO98/1448 and its restoration landform design, landfilling operations never progressed into Area 2 so it remains unrestored and unable to achieve the intended restoration landform due to expiry of the landfill planning permission. Area 2 has historically been partially infilled with quarry overburden. A lower level restoration design has recently been agreed with the planning authority under permission MO/2023/0789; and
- **Area 3:** The northern area, directly north of Area 2 and east of the brickworks has been quarried and is an unrestored flooded quarry void. Mineral permission MO02/1072 includes an outstanding requirement to restore and the restoration design has recently been agreed with the planning authority under permission MO/2023/0789.

Area 1 is already permitted (EPR/CP3994HB) and has been infilled utilising a landfill environmental permit and is formally closed. This EP application relates to the permanent deposit of waste in Areas 2 and 3 only. The EP application seeks to allow for deposit for recovery activities to take place in order to restore the quarry in accordance with its approved restoration scheme. The EP boundary includes Areas 2 and 3 and the access road from Horsham Road (A24).



Figure 1-1 Wider Clockhouse Quarry - Site Location and Areas



**This figure shows the boundary of the wider Clockhouse Quarry site. It is noted that the EP boundary will comprised Area 2, Area 3 and the access road only.*

The Site is situated approximately 950m south of the village of Capel and approximately 10km west of Crawley.

The Site is accessed off Horsham Road (A24) which runs to the west of the site. The National Grid Reference (NGR) for the centred site is TQ 17541 38620.

The majority of the land surrounding the Site is characterised by open/agricultural land. The site is situated within the Clock House Brickworks Site of Special Scientific Interest (SSSI) which extends to the north, and south. The Site is designated as it shows beds in the lower part of the Weald Clay Group, stratigraphically above the strata seen at the GCR SIL at Warnham Auclay SSSI is located approximately 400m to the west of the Site. The closest residential properties lie approximately 80m to the east.



The Site's location, EP boundary, layout and nearby receptors are shown on the following drawings included in the EP application:

- Drawing 001 – Site Location Plan
- Drawing 002 – Environmental Permit Boundary and Site Layout Plan
- Drawing 003 – Local Receptors
- Drawing 004 – Natural and Cultural Heritage.

The above drawings and other drawings relevant to this ESSD are included in **Appendix A**. The general surrounding land uses of the Site are detailed in **Error! Reference source not found..**

Table 1-1 Surrounding Land Uses

Boundary	Description
North	Fields and open/agricultural land followed by Rusper Road, and Capel village.
East	Rusper Road lies immediately to the east followed by open/agricultural land and individual residential properties. Individual commercial/industrial properties including RMV Heating & Plumbing Dorking, and Surrey Hills Bikes – Servicing and Coaching also lie in this direction.
South	Fields and open/agricultural land, the railway line and Ridge Farm.
West	The previously infilled Area 1 of Clockhouse Quarry, and Clockhouse Brickworks followed by the Horsham Road (A24) and the railway line. Beyond this lies open/agricultural land and residential properties.

A summary of the potentially sensitive environmental receptors located within the vicinity of the proposed boundary are presented in Table 1-2.

Table 1-2 Identified Receptors

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Local receptors located within 1km of the site boundary as shown on Drawing 003			
Surface Water Features associated with Clockhouse Quarrying	Surface Water Features	N/A	Within EP Boundary
Horsham Road (A24)	Local Transport Network	West	Adjacent
Open/Agricultural Ground	Open/Agricultural Ground	North, east, south	Adjacent
Brickworks (derelict)	Commercial/Industrial	Northwest	Adjacent
Clockhouse Quarry Area 1	Landfill	Southwest	Adjacent
Pond	Surface Water Feature	East	10m
Stream	Surface Water Feature	East	15m
Stream- Fylls Brook is to the south, Clockhouse Gill is to the west	Surface Water Feature	South	20m
Rusper Road	Local Transport Network	East	45m



Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Residential Property	Residential	East	80m
Surrey Hills Bikes Servicing and Coaching	Commercial/Industrial	East	80m
Residential Property	Residential	Northeast	90m
Railway Line	Local Transport Network	Southwest	140m
Carrington's International	Commercial/Industrial	West	150m
Residential Property	Residential	Northwest	200m
Pond	Surface Water Feature	West	200m
RMV Heating and Plumbing Dorking	Commercial/Industrial	East	225m
Residential Property	Residential	West	250m
Pond	Surface Water Feature	East	260m
Mole Valley Specialist Cars Ltd	Commercial/Industrial	West	310m
Sure Permanent Makeup Training	Commercial/Industrial	Southwest	340m
Pond	Surface Water Feature	North	410m
Clarks Green	Residential	South	950m
Ecology and Cultural and Natural Heritage identified within 2km of the Site boundary as shown on Drawing 004, and Nature & Heritage Conservation Screening Report			
Clock House Brickworks SSSI	SSSI	N/A	Within EP Boundary and extending to north and southwest
Deciduous woodland	Priority Habitat Inventory	Northwest and east	Adjacent and a small area within EP boundary
Ancient & Semi-Natural Woodland	Ancient Woodland	South and east	Adjacent and a small area within EP boundary
Fylls Brook Local Wildlife Site	Local Wildlife Site	South	15m
The Clock House	Listed Building	Northwest	155m
Fyllsbrook Cottage	Listed Building	East	280m
The Taylors	Listed Building	East	300m
Barn at Taylors Farm	Listed Building	East	280m
Auclaye SSSI	SSSI	West	400m
Barn at Pleystowe Farm	Listed Building	North	440m
Vann Lake and Ockley Woods SSSI	SSSI	West	1,420m



Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
The Medieval Moated Site, North of Oakdale Farm	Scheduled Monument	West	2,000m

1.3 Nature and Heritage Conservation Screening Report

The Pre-application Nature and Heritage Conservation screening provided by the EA (EPR/EP3924LZ/P001) lists the following sites and features within relevant screening distances from the proposed EP boundary:

- Clock House Brickworks (SSSI)
- Auclaye (SSSI)
- Fylls Brook (Clockhouse Gill) Local Wildlife Site
- Ancient Woodland
- Code 2 protected species (Great Crested Newts) – see Section **Error! Reference source not found.**
- Deciduous woodland
- Wet woodland

A copy of the Nature and Heritage Conservation screening report is provided as **Appendix B**.

The EP will be operated under strict controls to ensure that impacts from the operations to the surrounding receptors are kept to a minimum.

1.4 Ecology

1.4.1 European/International Sites

The Multi-Agency Information for the Countryside (MAGIC) website has been accessed to determine the presence of any European or Internationally designated sites within a 2km radius from the site's EP boundary. The search identified the following:

1.4.2 Sites of Special Scientific Interest (SSSI)

The site is located within the Clock House Brickworks Site of Special Interest (SSSI) which extends to the north and south. Exposures within the quarry provide examples of palaeontomological interest features and stratigraphic importance. It also provides insights into the Wealden palaeoenvironment and palaeogeography. Following the receipt of comments from Natural England, the restoration proposals were revised in order to retain exposures of the Weald Clay within the site. Exposures would be retained on the northern and eastern flanks of the northern void, along with a small section on the eastern edge of the southern void.

Auclaye SSSI is located approximately 400m to the west of the site.

Vann Lake and Ockley Woods SSSI is situated approximately 1,420m to the west.



1.4.3 Woodland (Ancient and Deciduous)

Several areas of ancient woodland are located within a 2km radius of the Site. The closest is an area of Ancient & Semi-Natural Woodland within the site boundary on the east. There are other sections of ancient woodland immediately to the south of the site and to the west along the access route to the site. Areas of deciduous woodland are located to the south and east of the Site, with small areas located within the EP boundary. The documents submitted as part of the latest planning permission (MO/2023/0789) explain that “*A minor temporary loss of around 0.065ha is unavoidable; however, the area affected is naturally regenerating woodland which has established on the bund created at the head of the unnamed tributary to Fylls Brook. Notwithstanding this, an Ancient Woodland Compensation Strategy has been prepared and provided as Appendix R3/1 of the Regulation 25 Response.*”

Further areas are illustrated on Drawing 004.

The searches on MAGIC confirmed that there are none of the following within 2km of the site's boundary:

- National Parks;
- Local Nature Reserves (LNR);
- National Nature Reserves (NNR);
- Ramsar Sites;
- Special Areas of Conservation (SAC);
- Special Protection Areas (SPA);
- Biosphere Reserves; and
- Areas of Outstanding Natural Beauty (AONB).

1.5 Cultural and Heritage

The MAGIC map website has been assessed to determine the presence of any cultural and heritage sites within a 2km radius from the site's EP boundary. The search identified the following:

1.5.1 Scheduled Monuments

The Medieval Moated Site, North of Oakdale Farm Scheduled Monument lies approximately 1.7km west of the site.

1.5.2 Listed Buildings

Multiple listed buildings are situated within a 2km radius of the Site as illustrated on Drawing 004. The closest listed buildings within a 500m radius of the Site are as follows:

- The Clock House lies approximately 155m west;
- The Taylors lies approximately 300m east;
- Barn at Taylors Farm lies approximately 280m east;
- Fyllsbrook Cottage lies approximately 345m east; and
- Barn at Pleystowe Farm lies approximately 440m north.

The searches on MAGIC confirmed that there are none of the following within a 2km radius of the Site's boundary:

- Registered Battlefields;



- Registered Parks and Gardens;
- World Heritage Sites; or
- National Parks.

1.6 Hydrogeology, Hydrology and Geology

Hydrogeological, hydrological and geological receptors are set out in Section 3.0 of this ESSD Report.

1.7 Site Classification

The specified waste management activities that will be carried out at the site under the EP are as follows:

- **R3:** Recycling or reclamation of organic substances which are not used as solvents.
- **R5:** Recycling / reclamation of inorganic compounds – for the use of waste for the purpose of restoration of land.
- **R10:** Land treatment resulting in benefit to agriculture or ecological improvement
- **R13:** Storage of waste pending any of the operations numbered R3 or R5.

1.7.1 Waste Recovery

The EP application seeks to allow 686,000m³ of waste to be permanently deposited to land as a deposit for recovery activity,

A Waste Recovery Plan (WRP) has been prepared for the activity and was approved by the EA on 12 September 2025. The WRP, supporting documentation, and a copy of the EA's approval letter are provided as Section 4 of the EP application. There have been no changes to proposals since the approval of the WRP.

1.7.2 Screening / Crushing

It is noted that the EP is principally for the permanent deposit of waste as a waste recovery activity in the restoration of the Site. SUEZ requires the EP to allow flexibility for occasional crushing and screening activities in order for some incoming wastes to become more suitable for use (i.e. screening of soils for a better-quality restoration layer). Crushing and screening will be undertaken in the working phase and plant will be kept away from surrounding receptors.

1.7.3 Discharge Consent

~~the~~ The EP application seeks to permit the discharge of surface water to a tributary of Fylls Brook.

The discharge consent will contain conditions that replicate the conditions an existing discharge consent P12567/V002 (a copy of which is provided as **Appendix D**) held by Forterra Building Products Ltd ('Forterra'). SUEZ has an agreement with Forterra to use the discharge permit for the removal of collected runoff waters from the quarry void. It is, however, recognised that operating under another company's discharge permit is not conducive to SUEZ's long-term operation and management of the site. SUEZ therefore seek to permit the discharge of surface water as part of the EP application which replicates the conditions outlined in permit P12567/V002.

A "Clockhouse Quarry – Discharge Permit Application Supporting Document" has been prepared to support the application and is provided as Section 13 of the EP application.



Where relevant, the discharge consent arrangements are referred to throughout this ESSD report.

1.8 Application Boundaries and Site Security

The EP boundary is illustrated on Drawing 002, Environmental Permit Boundary and Site Layout Plan. The proposed restoration scheme is illustrated on Drawing CH 3/1, Landscape Strategy.

The site benefits from the following infrastructure to keep the site secure and prevent unauthorised access:

- The site is adequately secured using gates and fencing comprising palisade, chain link and wire mesh fencing as well as thick vegetation;
- Regular inspection to ensure continual monitoring of security provisions; and
- Visitor sign in/sign out book.



2.0 Source Term Characterisation

2.1 Source Identification

This Conceptual Site Model includes the potential sources of pollution identified from the proposed activity that could impact human health or the environment.

2.2 Site Development

2.2.1 Historical Development

The Site has a complex planning history. Mineral extraction at the Site predates the modern planning system and the mineral extraction permission covers both worked-out parts of the quarry and future extraction areas. Separate planning permissions were granted progressively to allow import of waste for restoration of the quarry voids by landfilling. Surrey County Council (SCC) is the minerals and waste planning authority for the Site.

In 1947, an Interim Development Order (IDO) consent (ref. C352) was granted under the Town and Country Planning (General Interim Development) Order 1946. This IDO was granted for the “*excavation of clay for the purposes of brickmaking*” from approximately 43.7 hectares of land.

The IDO permission was registered in accordance with the Planning and Compensation Act 1991 on 14 May 1992 (under ref. MO92/0271) and a subsequent application for determination of conditions, supported by an Environmental Statement, was approved by SCC on 27 November 2003 (ref. MO02/1072). Planning Permission MO02/1072 permits continued mineral working and deposit of mineral waste at Clockhouse Quarry, in accordance with an agreed working scheme.

Condition 25 of the Planning Permission MO02/1072 required a restoration scheme to be submitted by 1 January 2019, for approval by the planning authority. The submission of the restoration scheme has remained outstanding until recently due to the difficulties of restoring a quarry void without import of material to achieve an acceptable and sustainable restoration.

To satisfy Condition 25 of the Planning Permission MO02/1072, a planning application (reference 2022/0191) for ‘*the importation of inert materials and soils (waste or non waste) to facilitate the restoration of the quarry workings*’ was submitted to SCC in December 2022. This planning application initially proposed to restore the Site by importing approximately 740,000m³ of inert material to achieve a low-level restoration scheme, reinstating ground levels alongside the brickworks, improving surface water drainage and enabling ecological habitats to be created.

SCC consulted on the planning application in line with the statutory procedures. As a result of the consultation, SCC indicated that the originally proposed creation of a level area adjacent to the Clock House Brickworks was not acceptable. The proposed restoration scheme of the planning application was amended to remove the level area next to Clockhouse Brickworks and create a gentle slope to the proposed ‘valley’ floor of the restored landform. This has revised the required amount of material to facilitate the works from circa 740,000m³ to 686,000m³.

The documents submitted to SCC to set out this change were the following:

- Clockhouse Quarry, Regulation 25 Response – Provision of Further Environmental Information, provided as an appendix of the WRP.
- Clockhouse Quarry Design Statement (rev.A) November 2023, provided as an appendix of the WRP.



Planning Permission MO/2023/0789 was granted by SCC on 17 June 2025 for “*the importation and deposit of inert materials and soils on 14.5 hectares of land to facilitate the restoration of quarry voids to a nature conservation afteruse with drainage*”. A copy of the decision notice is provided as **Appendix C**.

2.2.2 Proposed Development

As discussed in Section 2.1.1, Planning Permission MO/2023/0789 was granted by SCC on 17 June 2025. Approximately 686,000m³ (1,234,800 tonnes at 1.8 tonnes per m³) of suitable waste such as soils and overburden will be required to achieve the approved restoration profile. In accordance with Condition 4 of the permission, infilling activities are expected to be completed within 14 years of commencement.

The importation of waste will raise the base of the quarry to facilitate a low-level restoration of the mineral workings. The Site will be restored to a mixture of grassland, and woodland with a series of attenuation ponds. The proposed restoration scheme is illustrated on Drawing CH3/1 Landscape Strategy. Cross-sections are shown on Drawing Clh-INF-1223-02 “Sections Showing Proposed Infill Levels”

This EP application seeks to authorise the use of suitable imported waste materials in the restoration of the site as a deposit for recovery operation. A Waste Recovery Plan (WRP) has been prepared and was approved by the EA on 12 September 2025. A copy of the WRP, supporting information and the Recovery vs Disposal Approval Letter from the EA is provided as part of the EP application. There have been no changes to proposals since the approval of the WRP.

The restoration scheme has been designed to achieve a number of objectives, as set out in the Planning Statement of Planning Permission MO/2023/0789¹:

- *“to reduce the steep slopes/faces around the boundary of the clay void, creating a more natural landform with shallower slope gradients reflecting the valley landforms seen in the surrounding area;*
- *to reduce the size and depth of water bodies and gradients of surrounding land to minimise health and safety risks associated with unauthorised access to the site;*
- *to reduce the size and depth of water bodies to minimise health and safety risks associated with bird strike for aeroplanes approaching or taking off from Gatwick airport;*
- *to create a final landform that drains naturally and does not require permanent pumping;*
- *to provide a series of shallow swales and waterbodies designed to hold back rainfall in storm conditions to greenfield rate, and,*
- *to minimise impacts on and provide appropriate restoration habitat for the onsite population of great crested newts and other flora/fauna of interest.”*

The development is required to be carried out in accordance with the drawings included within Planning Permission MO/2023/0789. These drawings are listed in Table 2-1 and, where applicable to this ESSD, are included within **Appendix A**.

¹ <https://planning.surreycc.gov.uk/Planning/Display/SCC%20Ref%202022/0191#>



Table 2-1 Planning Permission MO/2023/0789 Drawings

Drawing Title	Drawing Ref.	Dated
Site Location Plan	CH2/1 Rev0	November 2022
Site Plan	CH2/2 Rev1	November 2023
Capel Landfill & Clockhouse Quarry – Worked Out Areas	Clh-WOA-1122	November 2022
The Capel Quarry Site Plan	CLK-QREST-0521-02	May 2021
Section A-A Proposed Ponds	CH3/2 Rev P03	14 November 2023
Section B-B At 15 Years Post Planting	CH3/3 Rev P04	31 October 2023
Section C-C At 15 Years Post Planting	CH3/4 Rev P04	October 2023
Section D-D Typical Section through Proposed Access Route	CH 3/5 Rev P02	14 December 2022
Section E-E at 15 Years Post Planting	CH 3/6 Rev P03	14 November 2023
Landscape Strategy Sheet 1 of 2	CH 3/1 Rev P09	September 2024
Landscape Strategy Sheet 2 of 2	CH 3/1 Rev P01	November 2023
Proposed Site Reception Area	CH 3/7 Rev P02	February 2023
Heatmap for Infill Area	Clh-HMAP-1123-01	November 2023
Isopachyte Between Sept 2022 Survey & Proposed Infill Contours	Clh-ISO-0824-01	August 2024
Proposed Infill Contours	Clh-INF-1223-01a Rev A	July 2024
Sections Showing Proposed Infill Levels	Clh-INF-1223-02	December 2023

2.3 Source

2.3.1 Proposed Waste Activities

The EP application is for deposit of waste for recovery (and physical treatment for occasional crushing and screening). Minimal volumes of waste will be physically treated through a screener/crusher where necessary before being deposited into the Site.

The waste management activities that will be carried out at the Site, as specified in Annex I of the Waste Framework Directive, are:

- **R3:** Recycling or reclamation of organic substances which are not used as solvents.
- **R5:** Recycling / reclamation of inorganic compounds – use of waste for the purpose of restoration of land.
- **R13:** Storage of wastes pending any of the operations numbered R3 or R5.



2.3.2 Quantity of Permitted Wastes

Planning gives permission for the importation of circa 686,000m³ of suitable fill to achieve the restoration scheme required by permission MO02/1072 and approved under Planning Permission MO/2023/0789. This equates to approximately 1,234,800 tonnes at an assumed density of 1.8t/m³.

The required volume has been calculated by comparing existing ground levels at the Site to the approved restoration profile, as shown on Drawing No: Clh-INF-1223-01a Rev A Proposed Infill Contours dated July 2024, an approved plan in the Planning Permission for the approved scheme (MO/2023/0789).

There is no suitable material available on-site to use in the works, therefore material is required to be imported.

It is noted that initial planning application documents submitted for the scheme refer to "740,000m³" of required material. This volume has been superseded by the revised design submitted in December 2023 with the Regulation 25 planning response.

Waste will be accepted at a maximum rate of 500,000 tonnes per annum.

2.3.3 Permitted Waste Types

There are no restoration soils currently stockpiled on the site that may be used for restoration.

It is proposed that only waste material that is suitable for its intended use will be used in the restoration of the site.

The waste types which will be used for the development are detailed the following tables:

- Table 2-2 which lists waste types to be deposited below the water table; Table 2-2
- Table 2-3 which lists waste types to be used as general fill; and
- Table 2-4 which lists waste types for the restoration layer.

These EWC codes and descriptions (including any restrictions) are included in the Waste Recovery Plan (WRP) approved by the EA on 12 September 2025.

Table 2-2 Wastes to be accepted for below the water table

Waste Code	Description	Comments
01	Wastes resulting from exploration mining, quarrying and physical and chemical treatment of minerals	
01 01	wastes from mineral excavation	
01 01 02	wastes from mineral non-metalliferous excavation	Restricted to waste overburden and interburden only.
01 04	wastes from physical and chemical processing of non-metalliferous minerals	
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07	
01 04 09	waste sand and clays	
17	Construction and demolition wastes (including excavated soil from contaminated sites)	
17 01	concrete, bricks, tiles and ceramics	
17 01 01	concrete	



Waste Code	Description	Comments
17 01 02	bricks	low contents of other types of materials (like metals, plastic, soil, organics, wood, rubber, etc). The origin of the waste must be known.
17 01 03	tiles and ceramics	
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 04	soil and stones other than those mentioned in 17 05 03	To exclude topsoil and peat. To exclude soils and stones from contaminated sites.
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	
20 02	garden and park wastes (including cemetery waste)	
20 02 02	soil and stones	To exclude topsoil and peat.

Table 2-3 Wastes to be accepted for General Fill

Waste Code	Description	Comments
01	Wastes resulting from exploration mining, quarrying and physical and chemical treatment of minerals	
01 01	wastes from mineral excavation	
01 01 02	wastes from mineral non-metalliferous excavation	Restricted to waste overburden and interburden only.
01 04	wastes from physical and chemical processing of non-metalliferous minerals	
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07	
01 04 09	waste sand and clays	
10	Wastes from thermal processes	
10 12	wastes from manufacture of ceramic goods, bricks, tiles and construction products	
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)	
10 13	wastes from manufacture of cement, lime and plaster and articles and products made from them	
10 13 14	waste concrete and concrete sludge	
17	Construction and demolition wastes (including excavated soil from contaminated sites)	
17 01	concrete, bricks, tiles and ceramics	
17 01 01	concrete	low contents of other types of materials (like metals, plastic, soil, organics, wood, rubber,
17 01 02	bricks	
17 01 03	tiles and ceramics	



Waste Code	Description	Comments
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	etc). The origin of the waste must be known.
17 03	bituminous mixtures	
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	Road plannings only. This material will only be used for the creation of the access track (if required).
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 04	soil and stones other than those mentioned in 17 05 03	To exclude topsoil and peat. To exclude soils and stones from contaminated sites.
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 09	minerals (for example sand, stones)	Restricted to wastes from treatment of waste aggregates that are otherwise naturally occurring minerals. Does not include fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard.
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	
20 02	garden and park wastes (including cemetery waste)	
20 02 02	soil and stones	To exclude topsoil and peat.

Table 2-4 Wastes to be accepted for the Restoration Layer

Waste Code	Description	Comments
01	Wastes resulting from exploration mining, quarrying and physical and chemical treatment of minerals	
01 01	wastes from mineral excavation	
01 01 02	wastes from mineral non-metalliferous excavation	Restricted to waste overburden only.
02	Waste from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	
02 04	wastes from sugar processing	



Waste Code	Description	Comments
02 04 01	soil from cleaning and washing beet	
17	Construction and demolition wastes (including excavated soil from contaminated sites)	
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 04	soil and stones other than those mentioned in 17 05 03	To exclude soils and stones from contaminated sites. Topsoil and peat will only be used in the top 50cm of the restoration layer.
17 05 06	dredging spoil other than those mentioned in 17 05 05	
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 09	minerals (for example sand, stones)	
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	
20 02	garden and park wastes (including cemetery waste)	
20 02 02	soil and stones	Topsoil and peat will only be used in the top 50cm of the restoration layer.

2.3.4 Waste Acceptance Procedures

Strict waste acceptance procedures will be in place at the site to ensure that non-conforming waste is not accepted at the site, as described in the Waste Acceptance Procedures (WAP) included within Appendix B of the Operating Techniques document (Ref. 402.065294.00001_OT) of the EP application. All waste accepted at the site will be suitable for deposit, and no contaminated materials will be accepted.

Documentation will accompany all waste material accepted, which will be reviewed in accordance with the site's waste pre-acceptance and acceptance procedures to ensure any materials used are suitable for use in the restoration operations.

These procedures will ensure that only materials that are both chemically and physically suitable for use in the recovery activity will be accepted at the site.

Waste inputs will be limited to those that meet inert Waste Acceptance Criteria (iWAC) limits as outlined within section 2.1.2 of the Landfill Directive 2003/33/EC and reproduced in Table 2-5 and Table 2-6 (whilst it is proposed that this development is a DfR activity, it is considered appropriate to follow applicable guidance on inert landfills).

Any wastes that do not meet the criteria will not be accepted at the Site.



Table 2-5 Limit values for waste acceptable for Inert Waste

Component	L/S = 2 l/kg (mg/kg dry substance)	L/S = 10 l/kg (mg/kg dry substance)
Arsenic	0.1	0.5
Barium	7	20
Cadmium	0.03	0.04
Chromium (Total)	0.2	0.5
Copper	0.9	2.0
Mercury	0.003	0.01
Molybdenum	0.3	0.5
Nickel	0.2	0.4
Lead	0.2	0.5
Antimony	0.02	0.06
Selenium	0.06	0.1
Zinc	2	4
Chloride	550	800
Fluoride	4	10
Sulphate	560*	1000*
Phenol	0.5	1
DOC**	240	500
TDS***	2500	4000
Notes	* If the waste does not meet these values for sulphate, it may still be considered as complying with the acceptance criteria if the leaching does not exceed either of the following values: 1,500mg/l as C₀ at L/S = 0.1l/kg and 6000mg/kg at L/S = 10l/kg. ** If the waste does not meet these values for DOC at its own pH value, it may alternatively be tested at L/S = 10 l/kg and a pH between 7,5 and 8,0. The waste may be considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 500 mg/kg. *** The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.	

Table 2-6 Limits for Total Content of Organic Contaminants

Parameter	Value (mg/kg)
TOC (total organic carbon)	30,000 (*)
BTEX (benzene, toluene, ethylbenzene and xylenes)	6.0
PCBs (polychlorinated biphenyls, 7 congeners)	1.0
Mineral oil (C10 to C40)	500
PAHs (polycyclic aromatic hydrocarbons)	100



Parameter	Value (mg/kg)
* In the case of soils, a higher limit value may be admitted by the competent authority, provided the DOC value of 500 mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7,5 and 8,0.	

EA guidance 'Testing for Disposal to Landfill'² clarifies: "While limits are set for these tests in the Council Decision annex, the Environmental Permitting Regulations, schedule 10 state that the L:S 10 l/kg test must be used." It is therefore proposed that the L:S 10l/kg WAC limits will be used for determining priority contaminants.

2.4 Consideration of Schedule 10 and Schedule 22 of the EPR 2016

The Hydrogeological Risk Assessment (HRA) (ref: 402.065294.00001/HRA) included as Section 9 of this EP application demonstrates that the site complies with the relevant requirements of Schedule 10 (Landfill) and Schedule 22 (Groundwater Activities) of the Environmental Permitting Regulations 2016 (as amended). These regulations require that certain substances (Hazardous Substances) are not discharged to groundwater such that they are discernible, and that the discharge of other substances (Non-Hazardous Pollutants) is limited "so as to prevent pollution".

The results of the HRA have established the following in relation to Schedule 10

- the proposed recovery operation will only accept clean inert waste streams below the water table. Above the water table, a wider selected general inert infill will be accepted. The modelling undertaken has demonstrated that the proposed site design would limit any significant release of hazardous and non-hazardous substances to the Weald Clay aquifer. Accordingly, there is no significant contaminant source and leachate management is not required;
- a sidewall and basal layer of clean inert material with a minimum thickness of 2 metre will be provided;
- essential and technical precautions have been outlined;
- requisite surveillance, which includes the monitoring of groundwater around the site has been detailed to ensure the installation remains in compliance with the Environmental Permitting Regulations 2016 (as amended).
- Groundwater quality action levels and surface water quality compliance limits and action levels have been set in order to ensure the adequate protection of ground and surface water resources; and
- the Site will comply with the relevant requirements of the Schedule 10 of the Environmental Permit Regulations 2016 (as amended).

The results of the HRA have established the following in relation to Schedule 22:

- the proposed development poses a potential hazard to ground and surface water quality. Consequently, it falls within the scope of Schedule 22 (Groundwater Activities) of the Environmental Permitting Regulations 2016 (as amended);
- this assessment has outlined the Conceptual Site Model that must be developed for deposit for recovery operations;

² Environment Agency (March 2013). *Waste Sampling and Testing for Disposal to Landfill*. Ref. EBPRI 11507B Final



- the proposed and installed technical precautions will prevent the discernible discharge of Hazardous Substances to groundwater throughout the Site's lifecycle;
- the proposed technical precautions will limit the introduction of Non-Hazardous Pollutants into groundwater so as to avoid pollution throughout the Site's lifecycle; and
- the following essential technical precautions have been identified as part of the HRA:
 - the selected general inert material to be accepted above the water table will meet WAC limits, and may require WAC testing as set out in Operating Techniques Appendix B;
 - the clean inert materials to be accepted to the lower infill do not require WAC testing if they come from a single source, are well characterised, and carry no risk of contamination. These materials are assumed to meet inert WAC limits;
 - a risk-based programme of groundwater action level monitoring will be implemented, and control levels have been outlined.
- The Site therefore complies with the relevant requirements of the Schedule 22 (Groundwater Activities) of the Environmental Permitting Regulations 2016 (as amended).



3.0 Pathway and Receptors

3.1 Pathway and Receptor Identification

The Conceptual Site Model includes the pathways that potential pollution may follow to travel away from the Site and the potential receptors that may be affected by it. Note that some pathways and receptors are both a pathway and receptor, such as groundwater.

3.2 Regional Geology

3.2.1 Superficial Deposits

Published online mapping by the British Geological Survey (BGS)³ and Defra mapping of historic landfills⁴, indicates that the superficial deposits are absent across the Site.

The Cranfield Institute Soilscape identifies the site as lying in an area of '*slowly permeable seasonally wet loamy and clayey soils*', however much of this is expected to have been stripped before quarrying.

3.2.2 Bedrock

Published geological mapping by the BGS indicates that the bedrock across the Site comprises the Weald Clay Mudstone which covers the majority of the site area. In addition to this, mapping confirms the presence of the following:

- **Weald Clay Sandstone** – present as two east-west trending bands of limited areal spread (80-100m) width along the site's northern boundary and through the central portion of the Site; and
- **Weald Clay Limestone** – present along the site's southern and south-eastern boundary;

Both of these limestone and sandstone members are interpreted to be interbedded between significant thicknesses of mudstone and clay deposits which are typically associated with the Weald Clay

It is further noted that BGS borehole TQ13NE40 (located within the land ownership boundary of SUEZ) confirms the presence of clay to a depth of 114.6m, although quarrying only extended down to c.35m deep with the base of the main void at c. 67 mAOD.

3.3 Site Specific Geology

The last ground investigation (GI) at the Site was undertaken in 2022 to confirm the site's geological condition. Eleven (11) boreholes were drilled as part of the 2022 GI. The location of the boreholes, geological logs and borehole details are provided in the HRA (ref. 402.065294.00001).

The borehole logs indicate that the geology is exclusively stiff Weald Clay with rare sandstone and limestone horizons of limited thickness (including a 10cm thick limestone band at BH22/1, a 5cm thick sandstone band at BH22/1 and 12cm thick and 8cm thick sandstone bands at BH22/3).

³ BGS Geoindex Superficial Deposits 1:50,000 Scale Mapping, available at: <https://mapapps2.bgs.ac.uk/geoindex/home.html> (Accessed August 2025)

⁴ Defra mapping of Historic Landfills at [Defra Spatial Data Download](#)



3.4 Hydrology

Surface water features associated with the quarrying activities are situated within the EP boundary.

The Clock House Gill flows south into Fylls Brook in the southwest corner of the SUEZ ownership boundary and is the source of Fylls Brook.

There are two unnamed tributaries of Fylls Brook which are located east of the application site. The first unnamed tributary forms the eastern boundary of the southern part of the application site and receives pumped flows from the quarry under discharge consent number P.12567/S/05. The second unnamed tributary of Fylls Brook rises from the east side of the northern area and flows south eastwards. Both tributaries discharge south into Fylls Brook. Small ponds are located approximately 200m west, 10m east, 260m east, and 410m north.

Surface water features surrounding the site are illustrated on Drawing 003.

The site lies within Flood Zone 1; i.e. land which has a low probability of flooding (less than 1 in 1000 annual probability of river or sea flooding) and therefore, the site is considered to have a low probability of flooding⁵ from rivers or the sea.

3.5 Hydrogeology

3.5.1 Recharge Mechanisms

The Met Office's 1991 – 2020 climate average data for Charlwood monitoring station (situated c.6km east of the site) confirms the average annual rainfall is 834 mm/year.

Across the application Site, infiltration rates are likely to be low due to the predominance of clay and mudstone-dominated, low permeability bedrock. The proposed inert infill materials shall be clay-rich and low permeability, and there expected future recharge rates following site operations are expected to remain as currently observed.

3.5.2 Aquifer Classification and Vulnerability

Published geological mapping by the BGS confirms that the bedrock across the Site comprises Weald Clay.

The Weald Clay is generally classified by the EA as Unproductive Strata, however the sandstone and limestone horizons within the Weald Clay are classified as Secondary A aquifers, described as:

... "Permeable layers of rock or drift deposits that are capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.."

The groundwater vulnerability of the Weald Clay in the vicinity of the Site is classified by the EA "High Vulnerability" where the bedrock geology is Weald Clay – Sandstone. However, the majority of the site is underlain by bedrock comprising the Weald Clay – Mudstone for which the aquifer status is considered "Unproductive" and so no vulnerability rating is attributed.

The Weald Clay has been recognised as a "Secondary A" aquifer for the purpose of this application and all associated risk assessment.

⁵ Flood Map for Planning <https://flood-map-for-planning.service.gov.uk>, accessed September 2024.



3.5.3 Water Resources and Abstractions

A review of DEFRA's Magic Map confirms that there are no Source Protection Zone (SPZs) within a 2km radius of the site. The Environment Agency has indicated that there are no licensed groundwater or surface water abstractions within a 2km radius of the site.

Mole Valley District Council (MVDC) has indicated that there are no private unlicensed groundwater abstractions that they are aware of within a 2km radius of the site.

3.5.4 Groundwater Levels and Flow

Groundwater levels are measured on a monthly basis across eight site monitoring boreholes, since their installation in 2023. The data is presented in the HRA (Ref: 402.065294.00001_HRA) prepared for this EP application and summarised as follows:

- Groundwater levels in the vicinity of Clockhouse Quarry range from a minimum of 77.72 mAOD in the south at BH22/9, to 86.84 mAOD in BH22/6 situated in the west of the site. Groundwater levels range seasonally by 0.23m at BH22/2 up to 3.59m at BH22/8.
- It is noted that the above groundwater levels between July 2023 and March 2025 were measured at a time when the Clockhouse Quarry void had been partially dewatered. These data may therefore not be representative of the natural groundwater flow direction but instead show the current inward gradient towards the central dewatered void.
- Groundwater levels recorded at BH22/5 are likely influenced by the nearby watercourse (an unnamed tributary of the Fylls Brook to which the site discharges water from the quarry void). The watercourse commences at c. 80.5 mAOD, and is also potentially fed partly by groundwater seepages from the Weald Clay, although SUEZ believe the discharge to be the primary contributor to baseflow.
- Although northern boreholes BH22/1, B22/2 and BH22/3 have a higher ground elevation, groundwater levels are lower than those to the south, due to partial dewatering of the void. It is likely that these boreholes intercept a sandstone band within the Weald Clay, which has a higher permeability, allowing greater water level connectivity with the reduced water level in the void.
- As the base of the void is below 70 mAOD, no unsaturated zone is considered to be present beneath the quarry void / material that will be deposited for recovery.
- Following the cessation of dewatering, groundwater levels are likely to recover to an approximate range of 83 mAOD (or higher) along the northern site perimeter, to 80.5 mAOD at BH22/5 near the watercourse. The post-rebound hydraulic gradient is estimated at c. 3m across 300m i.e. 0.01, from north to south across the restored void.
- Consequently, under natural flow conditions, boreholes BH22/1, BH22/2 and BH22/3 are considered to be up-gradient of the site and would be representative of background groundwater quality. Boreholes BH22/5 and BH22/8 would be considered down-gradient under natural conditions. Groundwater levels recorded in BH22/6 appears to be elevated relative to adjacent boreholes; it is interpreted that this borehole potentially screens perched groundwater and therefore it is not included as a naturally down-gradient borehole.
- Attributed values of permeability, as determined from hydraulic testing of site boreholes, ranges from 4.0×10^{-6} m/s at BH22/8, to 9.6×10^{-6} m/s at BH22/4.



3.5.5 Groundwater Quality

Groundwater quality around the main void of Clockhouse Phase 2 has been characterised through monitoring of seven boreholes installed in the Weald Clay and situated around the principle area of infilling in the north. The data, which comprise 20 monitoring rounds completed between September 2023 and May 2025 is included in the HRA (Ref: 402.065294.00001_HRA) prepared for this EP application.

The data indicate that groundwater quality within the Weald Clay is generally within the relevant UK Drinking Water Standards (DWS), with the exception of the following:

- All monitoring boreholes recorded sulphate concentration which were elevated above the UK DWS of 250 mg/l. The values range from 487 mg/l in BH22/06 to 1,590 mg/l in BH22/05 and are well distributed within that range. The elevated concentrations are likely to derive from natural geochemistry of the Weald Clay;
- All monitoring boreholes recorded maximum ammoniacal nitrogen concentrations elevated above the UK DWS of 0.39mg/l, with concentrations ranging from 0.6mg/l in BH22/06, to 1.2mg/l in BH22/05.

As would be expected for natural bedrock groundwater, there were negligible detections of BTEX or phenols during these monitoring rounds.

3.6 Man-Made Subsurface Pathways

The site is located in an area characterised by mostly open/agricultural land and individual residential properties. The closest residential receptor is approximately 80m to the east of the EP boundary. As such it is unlikely that there are any underground utilities associated with gas, water, telephone or electricity supplies. Furthermore, given the undeveloped nature of the depressions, there are unlikely to be any man-made pathways associated with underground utilities, field drains, mine workings or boreholes.

3.7 Receptors and Compliance Points

3.7.1 Groundwater

The primary receptor for hazardous substances is assumed to be the groundwater within the Weald Clay Formation immediately beneath the Site (taking account of immediate dilution in the aquifer, but without any dispersion or attenuation in the aquifer pathway).

The primary receptor for non-hazardous pollutants is considered to be the groundwater at the down-gradient site boundary (down-gradient boreholes) in the Weald Clay.

For the purposes of defining receptors, the compliance points are taken to be at the down-gradient site boundaries. It is noted that there may be other physical receptors further away from the down-gradient Site boundary. Compliance with the Environmental Permitting Regulations 2016 at the points defined above will ensure that other receptors are adequately protected.

3.7.2 Surface Water

Surface water features in proximity to the Site are identified in Section 3.4 above. The site presently constitutes three disconnected void spaces which are flooded through a combination of surface water runoff and groundwater outfalling from the exposed mineral faces. A previous topographic survey undertaken in 2019 confirmed the water level as 77.4m AOD within the most northern pond, as maintained at this level by active pumping..

There is an unnamed tributary of Fylls Brook which rises in the centre of the eastern boundary of the application site. While the majority of the original catchment of this tributary



has been quarried, pumped flows from the existing quarry voids are discharged intermittently to this channel by SUEZ under active discharge consent (no.P.12567/S/05).

The EP application seeks to permit the discharge of surface water to a tributary of Fylls Brook.

The discharge consent will contain conditions that replicate the conditions of an existing discharge consent P12567/V002 (a copy of which is provided as **Appendix D**) held by Forterra Building Products Ltd ('Forterra'). SUEZ has an agreement with Forterra to use the discharge permit for the removal of collected runoff waters from the quarry void. It is, however, recognised that operating under another company's discharge permit is not conducive to SUEZ's long-term operation and management of the site. SUEZ therefore seek to permit the discharge of surface water as part of the EP application which replicates the conditions outlined in permit P12567/V002.

A "Clockhouse Quarry – Point Source Emission Supporting Document" has been prepared to support the application and is provided as Section 13 of the EP application.

Where relevant, the discharge consent arrangements are referred to throughout this ESSD report. A copy of the active discharge consent (no.P.12567/S/05) is provided as **Appendix D**.

The active discharge permit requires monitoring of the site outfall to the Fylls Brook at NGR 1779 3854. SUEZ propose to retain the monitoring requirements in the active discharge permit, with further discussion provided in Section 5.5.

To support the ongoing care of the closed south-western landfill site, SUEZ currently monitors adjacent waterbodies at three locations (SW1, SW3 and SW4). Of these, SW3 and SW4 are considered relevant to this assessment:

- **SW3**, which is situated on southern boundary at Fylls Brook and up-stream of the site discharge point, is considered analogous to the baseline water quality in the receiving Fylls Brook.
- **SW4**, which is situated in the most southerly flooded voidspace, is considered analogous to the water quality expected within the restored ponds.

Surface water quality monitoring has been undertaken on a quarterly basis at these points since 2008. A summary of the monitoring is included in the HRA (ref. 402.065294.00001_HRA).

As part of the EP application SUEZ shall seek to permit the point source emission of surface water run-off to a tributary of the Fylls Brook. SUEZ propose to retain the discharge location of the existing discharge permit, identifying it as "Discharge 1". An updated monitoring schedule is proposed, as presented in Table 5-4 of the HRA.

3.7.3 Amenity (Nuisance and Health Issues)

The proposed operations under the EP at the Site could have the potential to cause an impact to nearby receptor amenity. The risks that require further consideration include:

- Noise and Vibration;
- Fugitive Surface Emissions (including dust, mud); and
- Vandalism and Accidents.

All sensitive receptors have been identified in Section 0 of this ESSD.



The amenity and accident risks to these receptors are considered in depth in the Environmental Risk Assessment (ERA) (Ref: 402.065294.00001/ERA) included in Section 5 of this EP application. The Site will be operated in accordance with an Environmental Management System (EMS) and activities at the Site will occur in accordance with the Operating Techniques (OT) document prepared as part of the EP application. The OT provides a high-level overview of the infrastructure and procedures to be implemented at the Site.

To address noise risk, a Noise Impact Assessment and Noise Management Plan have been prepared as part of the EP application. These documents detail the preventative and remedial mitigation measures to be implemented at the Site to reduce the risk of noise emissions affecting nearby receptors. The Noise Impact Assessment and Noise Monitoring Plan are provided as Section 11 of the EP application. Mitigation measures include, but are not limited to, the following:

- A noise barrier along the western side of the site access road;
- Utilising a hybrid dozer which is quieter than a diesel version;
- Positioning the processing plant at a location on the Site where it is having the least noise impact at the NSRs as reasonably practicable;
- Only operating one of the items of processing plant at any one time i.e. the screener and crusher will not operate simultaneously;
- Constructing soil bunds at the relevant Site boundaries to reduce the identified impacts at the most effected NSRs;
- Ensuring all plant is kept well maintained;
- Ensuring silencers on plant are effective;
- Turning off plant when not in use;
- Use of non-tonal reversing signals on mobile plant operating on the Site; and
- Periodic noise monitoring will be undertaken at nearby residential properties.

To address dust emission risk, a Dust & Emissions Management Plan (DEMP) has been prepared to support the EP application which sets out the preventative and mitigation measures to be implemented at the Site to control dust. Mitigation measures include, but are not limited to, the following:

- Cessation of deposition of dusty waste during particularly dry or windy weather conditions;
- Screening of dusty material will be avoided during particularly dry and windy conditions;
- Screening will take place within the quarry void with the quarry walls providing natural dust attenuation;
- Temporary waste stockpiles will be located in a clearly designated area within the permitted site boundary;
- All plant and equipment will be maintained to a high standard;
- Drop heights will be minimised when depositing inert material;
- Monitoring of weather forecasts to choose appropriate mitigation measures;
- Vehicles will be evenly loaded to avoid spillages;



- Vehicles entering and leaving the site will be covered to prevent escape of materials during transport;
- All vehicles will adhere to the site speed limit of 10mph;
- Temporary haul roads will benefit from regular maintenance. Necessary repairs to the surface will be carried out as soon as reasonably practicable;
- Good housekeeping of roads and surfaces;
- Monitoring of weather forecasts;
- Haul roads will be swept and sprayed with water regularly to prevent the build of dust generating material;
- A wheel wash is implemented near the Site access and all vehicles leaving the site will do so via the wheel wash; and
- Use of bowzers or sprays in dry conditions.

The risks from accidents and incidents is addressed within the ERA and OT documents. The Site will be kept secure to prevent unauthorised access.



4.0 Pollution Control Measures

4.1 Site Infrastructure

The proposed layout of the Site is shown on Drawing 002, Environmental Permit Boundary and Site Layout Plan.

The Site is accessed via an established HGV access road from the Horsham Road (A24) to the west. This existing access serves the Site, the former brickworks and residential properties to the north of the EP boundary. There are no other shared facilities on the Site other than the entrance point of the access road.

The boundaries of the Site consist of a mixture of palisade, chain-link and wire mesh fencing, as well as parts that are heavily vegetated. There is an existing barrier gate at the site entrance off Horsham Road (A24). In addition, new gates will be constructed by the weighbridge.

The access road, wheel wash, weighbridge, and welfare office are located inside of the proposed EP boundary.

Surfacing across the Site comprises of soil/clay and tarmac. The majority of the Site, including all areas subject to the permanent deposit of waste, consists of soil and clay surfacing. The access road is tarmac.

Machinery fuel and oils will be stored on-site in bunded containers on a fixed pad separate from the infilling operations. The container area will be fenced and locked.

It is noted that there may be occasional screening and crushing operations undertaken under the EP. The operation of the screener and crusher will be limited to the working phase of the restoration, away from sensitive receptors.

4.2 Site Engineering

The Site will be developed as detailed within the approved WRP and in accordance with the associated planning consent.

Operations at the site will be undertaken in accordance with SUEZ's EMS. The OT document, and SUEZ's EMS will ensure procedures are implemented to achieve appropriate standards for managing environmental impacts. The OT is included in Section 10 of this EP application.

The recovery activities will be supervised by technically competent persons who hold the necessary Certificate of Technical Competence (CoTC) under the Waste Management Industry Training and Advisory Board (WAMITAB).

Consequently, operational procedures for the management of the site will ensure that all appropriate pollution prevention and control techniques are delivered reliably and on an integrated basis. The OT assists in maintaining compliance with regulatory requirements and managing environmental impacts.

4.2.1 Restoration operations will be conducted in accordance with an approved method statement and risk assessment, to ensure that the work is carried out to an appropriate standard and in accordance with the Environmental Permit and Planning conditions 41 and 42. Basal Geological Barrier

There is no basal geological barrier proposed at the Site.



4.2.2 Sidewall Geological Barrier

There is no sidewall geological barrier proposed at the Site.

4.2.3 Capping

The Site will be brought to level with imported suitable fill and topsoil as a deposit for recovery operation as part of this EP application. There is no requirement for an engineered cap due to the 'inert' nature of the waste streams.

4.3 Restoration

The Site will be restored to the restoration scheme contours shown on Drawing CH 3/1 P09. The restoration will comprise a low-level restoration of the former mineral workings such that the land drains surface water passively and fulfils the intention of the approved mineral scheme.

The scheme has been designed to achieve a number of objectives:

- minimise impacts on and provide appropriate restoration habitat for the onsite population of great crested newts and other flora/fauna of interest;
- to reduce the steep slopes/faces around the boundary of the clay void, creating a more natural landform with shallower slope gradients reflecting the valley landforms seen in the surrounding area;
- to reduce the size and depth of water bodies and gradients of surrounding land to minimise health and safety risks associated with unauthorised access to the site;
- to reduce the size and depth of water bodies to minimise health and safety risks associated with bird strike for aeroplanes approaching or taking off from Gatwick airport;
- to create an appropriate long term landform ; and
- to create a final landform that drains naturally and does not require permanent pumping;
- to provide a series of shallow swales and waterbodies designed to hold back rainfall in storm conditions to greenfield rate.

The scheme will establish habitats and features which are representative of the surrounding landscape character, including, but not limited to:

- Linear belt of native deciduous woodland;
- Woodland edge planting;
- Open species rich grassland
- Scrub/open mosaic habitat;
- Small ponds and waterbodies connected with a shallow meandering ditch/swale system;
- Marginal planting and species rich wet/damp grassland adjacent to the waterbodies and ditches.

Condition 42 of the Planning Permission MO/2023/0789 requires a Restoration and Aftercare Management Plan to be submitted and approved by SCC.. SUEZ will ensure that the site is restored in accordance with the approved Restoration and Aftercare Management Plan.



The proposed phasing at the Site is shown on Drawing No. DR-0200, Version S4-P5, Restoration Phasing. A copy of the drawing is provided in **Appendix A**.

The infilling area of the Site has been split into 8 phases, with the following predicted timeframe of infilling works:

- Phase 1 – Year 1;
- Phase 2 – Year 2;
- Phase 3 – Years 3 and 4;
- Phase 4 – Year 5 and 6;
- Phase 5 – Year 7;
- Phase 6 – Year 8;
- Phase 7 – Year 9; and
- Phase 8 - Year 10.

It is noted that the Planning Permission MO/2023/0789 states that work shall be completed within 14 years of the date of commencement. SUEZ envisage infilling works to be undertaken with a 10-year timeframe of this period. The phasing above reflects that predicted timeframe.

Planning Permission MO/2023/0789 includes specific conditions (Conditions 31 to 36) related to Great Crested Newts. Great Crested Newts are a European protected species and are protected in the UK under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) and,
- the Wildlife and Countryside Act 1981 (as amended).

Where works would harm this species or its habitats, a licence is required in order to make those activities lawful. Natural England is the licensing authority and has granted Great Crested Newt 'District Licences' to certain Councils in England. This enables those Councils ('Licensees') to issue authorisations to developers for specific parcels of development land, without further application (by the developer) to Natural England.

The requirement related to the Great Crested Newt District Licensing at the Site, requires that the northern quarry void must be restored and the proposed habitats created, prior to infilling commencing in the southern section of the quarry, as such the Restoration Phasing (Drawing DR-0200) has been designed to incorporate the requirements for Great Crested Newt management.

When the northern area of the quarry has been fully restored and habitat creation is complete, restoration work can progress into the southern area of the quarry in accordance with the District Licence.

Strict controls will be in place at the Site to ensure that the Site is restored in accordance with the phasing set out on the Restoration Phasing plan, and to minimise the impact on the Great Crested Newt population.

4.4 Management

4.4.1 Surface Water Management

SUEZ has produced an Operational Surface Water Management Plan, as required as a condition of Planning Permission MO/2023/0789, which sets out the surface water management arrangement during the recovery operation, while also setting out the current



pre-permit surface water management arrangements and the arrangement once the restoration is complete. The key principles of this management plan are set out in the following sections.

4.4.1.1 Pre-permit arrangements

The drainage arrangements prior to the issue of the EP at the site are as follows:

- Surface water run-off drains either to the existing large water body in the northern void or to the smaller ponds in the south of the site.
- Water from the ponds is pumped and discharged under the current discharge consent (P12567/V002) (provided as **Appendix D** of this ESSD) to the unnamed tributary of Fylls Brook to the east of the site, at NGR TQ1779 3854.

Prior to infilling commencing, the quarry voids will be dewatered via pumping under the current consented discharge to the unnamed tributary of Fylls Brook.

4.4.1.2 Operational phase arrangements

During the operational phase of the EP, where deposit of waste is occurring, dewatering will be required to remove rainwater and any small inflows of groundwater into the quarry void. Discharge from the site during the infilling works will be regulated via the EP. Surface water will continue to be pumped to the existing discharge point.

Surface water run-off will be retained within the quarry void for sufficient time to allow settlement of any suspended solids. It will then be pumped off site to the existing discharge point.

Drawing No. DR-0300 (Version S4-P3) "Surface Water Management Diagram" provided in **Appendix A** shows the proposed surface water management arrangements during the operational phase.

Temporary ditches will be constructed around the quarry void to intercept any surface water run-off flowing towards the Site and route surface water around the eastern side of the quarry, discharging to the existing northern quarry void.

Once the northern quarry void is substantially infilled, i.e. at the end of Phase 1 to 7 as shown on the Restoration Phasing drawing (Drawing No. DR-0200, Version S4-P5), a temporary settlement pond will be created to receive surface water run-off. Water will be pumped from the temporary settlement pond to the existing discharge point.

Planning Permission MO/2023/0789, specifies requirements related to the Great Crested Newt District Licensing. The conditions require that the northern quarry void must be restored and the proposed habitats created, prior to infilling commencing in the southern section of the quarry. This includes the creation of four of the final attenuation ponds and swales. Water collecting in the attenuation ponds will still be required to be pumped to the existing discharge point until later in the restoration works.

When the northern area of the quarry has been fully restored and habitat creation is complete, restoration work can progress into the southern area of the quarry in accordance with the District Licence. Temporary ditches, a temporary settlement pond and pumping will be required to manage surface water run-off in the southern area of the quarry.

In the final stages of the restoration, the current bund which is in place at the discharge point will be removed, creating the permanent outfall from the site. At this point, landscaping/vegetation will have become established and run-off from the site will have the same water quality and flow parameters as greenfield run-off.



4.4.1.3 Post-infilling arrangements

A surface water drainage strategy has been developed for the restored site that restricts flows to the greenfield runoff rate or lower. This consists of five ponds and an attenuation swale orientated north south through the site providing up to 5,889m³ of storage.

Runoff rates are restricted to the equivalent greenfield runoff rate or lower for all storm events up to and including the 1% annual exceedance probability (AEP) storm.

The post-infilling arrangements and calculations are included in the Flood Risk Assessment and Surface Water Drainage Strategy prepared as part of the planning applications for the Site. A copy of the approved Flood Risk Assessment and Surface Water Drainage Strategy is provided as **Appendix E**.

4.4.2 Material Handling

In accordance with Condition 41 of the Planning Permission MO/2023/0789 relating to the final restoration soils, *“All soil and soil forming materials shall be handled in accordance with sheets A-D of The Institute of Quarrying Good Practice Guide for Handling Soils in Mineral Workings Version 1 dated July 2021 and the Soils Handling Programme submitted with the [planning] application (Appendix S3, Environmental Statement Chapter 10 – Soils and Agricultural Land Classification).”*

Soil compaction arising as a result of restoration shall be remediated in accordance with Sheet O of the above guidance (Soil Decomposition by Bulldozer Drawn Tines). Plant or vehicle movements shall be confined to clearly defined haul routes or to the infill surface and shall not cross areas of topsoil or subsoil except for the express purposes of soil stripping or replacement operations.”

4.5 Post Closure Controls (Aftercare)

Upon completion of the restoration, the site will marry into the adjoining land. The site will be restored to a mixture of grassland, and woodland with a series of attenuation ponds. The proposed restoration scheme is illustrated on Drawing CH3/1 Landscape Strategy. Cross Sections are shown on Drawing Clh-INF-1223-02.

The site will be restored in accordance with the *“Restoration and Aftercare Management Plan”*. The Restoration and Aftercare Management Plan is required to include the following (as set out in Condition 42 of Planning Permission MO/2023/0789: “

- a) *Details of the material types and properties to be used in the restoration including acceptance criteria based on the engineering classification and permitted constituents of the restoration soils*
- b) *Details of the method, direction and phasing of infilling and restoration*
- c) *Details of the placement and compaction methodology to be applied to different material types*
- d) *Frequency and details of regular topographic survey and settlement review of the restored areas including a period of aftercare at least 5 years from completion of restoration*
- e) *Details of a monitoring and inspection regime by a suitably qualified geotechnical engineer to monitor signs of instability and settlement, including a period of aftercare of at least 5 years from completion of restoration*
- f) *Details of a Remedial Action Plan in the event that the Restoration and Aftercare Management Plan identifies settlement that could lead to backfalls and ponding, and including measures to maintain drainage. Following completion of measures identified in the approved Remedial Action Plan, a verification report shall be submitted to approved in writing by the County Planning Authority.”*



Due to the 'inert' nature of the waste it is concluded that the site will be complete (that is, the site no longer has the potential to cause damage to or deterioration of the environment and risk to human health) after the completion of restoration works of the site. The restoration activities are to be completed within 14 years, as set out in Condition 4 of the Planning Permission MO/2023/0789.



5.0 Monitoring

5.1 Weather

5.1.1 Obtaining Meteorological Information

Meteorological information will be obtained from the local Met Office reports.

5.1.2 Rainfall

The annual rainfall recorded at the two closest Met Office⁶ stations to the site for 2024 varies by 29.6mm, as detailed in Table 5-1 below. The average annual rainfall based on records from the two closest weather stations is 759.6mm.

Table 5-1 Rainfall Statistics

Month	Average Precipitation (mm)	
	Heathrow	Eastbourne
January 2024	50.6	27.5
February 2024	100.4	95.9
March 2024	85.0	69.3
April 2024	68.6	51.0
May 2024	54.4	81.1
June 2024	12.4	10.2
July 2024	83.6	32.3
August 2024	28.4	39.5
September 2024	114.8	161.4
October 2024	57.2	78
November 2024	62.2	68.3
December 2024	27.2	59.9
Annual Total	744.8	774.4
Annual Average	759.6	

The ongoing monitoring of rainfall is not considered to be applicable to operations on the Site. It is noted however that weather conditions will be checked via Met Office forecasts by Site staff to ensure appropriate mitigation measures are enacted to minimise dust emissions from operations e.g. by reducing/ceasing operation in periods of significantly dry weather.

5.1.3 Wind

Figure 5-1 shows the wind patterns for 2022 as identified by the Gatwick meteorological station, which is the closest weather station lying 9km east of the Site. The most prominent wind direction is from the southwest to the northeast with winds from other directions being more infrequent.

⁶ <https://www.metoffice.gov.uk/research/climate/maps-and-data/historic-station-data> Accessed June 2025



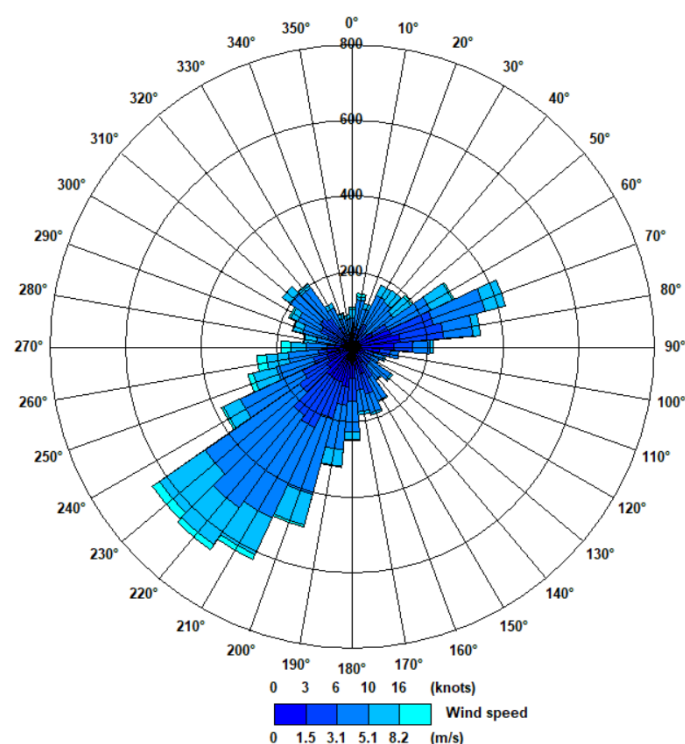


Figure 5-1 Gatwick Meteorological Station, 2022

Ongoing monitoring of wind speed and direction will be carried out in accordance with the Dust and Emissions Management Plan (DEMP) included in Section 8 of the EP application.

5.2 Gas Monitoring Infrastructure

Gas monitoring infrastructure is not considered to be required on site apart from the in-waste gas monitoring boreholes which will be constructed with a minimum of 2 boreholes per hectare once the voids have been restored.

5.3 Gas Monitoring

Due to the suitable 'inert' nature of the waste that will be deposited at the site, the waste will not generate significant quantities of landfill gas, and accordingly there is no requirement to undertake landfill gas management at the site.

5.4 Groundwater Monitoring

The monitoring of groundwater quality around the perimeter of the proposed DfR site will be carried out using the existing network of monitoring boreholes.

In keeping with inert landfill guidance, it is proposed that ongoing groundwater level and quality monitoring is undertaken from at least one up-gradient and two down-gradient boreholes (at each part of the site) within the underlying / adjacent Weald Clay Formation.

Collated groundwater elevation data confirm that the site currently manages an inward hydraulic gradient as a result of the ongoing dewatering of the mineral void space. With the exception of BH22/5, the current groundwater monitoring points are considered to be representative of background groundwater quality with the current surface water discharge point "*OUTLET AND SAMPLE POINT*" considered the ultimate down-gradient point for discharging waters.



Following a cessation of dewatering, the natural groundwater flow regime is expected to be in a broadly southerly direction across the site. It is therefore proposed that the following boreholes are used for groundwater quality monitoring purposes going forward:

- Up-Gradient: BH22/1, and BH22/3
- Down-Gradient⁷: BH22/5, and BH22/9

The proposed monitoring schedule is outlined in Table 4-1 below, and monitoring locations are shown on Drawing 002. The proposed schedule is based on current EA landfill monitoring guidance and the results of this HRA.

⁷ BH22/6 has been excluded as a down-gradient monitoring point as it is interpreted based upon recent groundwater level data that the boreholes screens perched waters rather than the wider aquifer.



Table 5-2: Proposed Groundwater Monitoring Schedule

	Groundwater Monitoring Locations	Monitoring Frequency	Measurement and Analytical Suite
Groundwater Quality	Up-gradient: BH22/1, BH22/3	Quarterly	electrical conductivity, chloride, ammoniacal nitrogen, pH and sulphate,
	Down-gradient: BH22/5, BH22/9	Annually	As above plus: total alkalinity, magnesium, potassium, calcium, sodium, arsenic chromium, copper, iron, zinc, manganese, nickel, lead, selenium, Monitoring well base (m BGL) VOC Suite to include BTEX
Groundwater Elevation	BH22/1 BH22/2 BH22/3 BH22/5 BH22/8	Quarterly	Groundwater level (m AOD)
	BH22/09 BH22/10 BH22/12	Annually	Monitoring well base (m BGL)

5.4.1 Groundwater Compliance

The HRA has demonstrated that the Site will limit the release of both Hazardous Substances and Non-Hazardous Pollutants.

As discussed in Section 2.2.3, BH22/5 is considered to be immediately up-gradient of the current and proposed site surface water discharge point. It therefore serves to use this monitoring borehole as an early warning point for impact on the watercourse via groundwater. Action limits have been set for BH22/5 and BH22/9 to reflect this.

The chosen determinands are the four modelled inorganic substances, one hazardous and two non-hazardous results. Lead is chosen as it is the only inorganic hazardous metal, nickel as a representative non-hazardous inorganic metal, and chloride and ammoniacal nitrogen as representative major ions.

The proposed action limits at the time of permit application are outlined in Table 4-2.



Table 5-3: Proposed Action Levels for BH22/5 and BH22/9

Determinand	Proposed GW Action Limits (mg/l)
Lead	0.0002
Nickel	0.012
Chloride	120
Amm. Nitrogen	1.2
Notes:	Lead – Hazardous substance - Compliance Limit set at typical LOD for labs (0.0002 mg/l). Nickel – Set at half the UK DWS of 0.013 mg/l, equivalent to average background (currently all GW monitoring locations) plus 3x Standard Deviations. Chloride – Set at 116 mg/l, equivalent to compliance limit proposed for surface waters and average background (currently all GW monitoring locations) plus 2x Standard Deviations. Amm. Nitrogen – Set at 1.2 mg/l, equivalent to maximum background recorded in BH22-05, 09/10/2023.

Any exceedance of the proposed action limits will trigger site specific contingency actions which are outlined in Section 4.5 below.

5.5 Surface Water Monitoring

One surface water monitoring location exists on site, identified as “*OUTLET AND SAMPLE POINT*”. This is regulated by an existing discharge permit operated by Forterra Building Products Ltd., for which SUEZ has an agreement in place to discharge waters collected within the mineral void.

As part of the EP application SUEZ shall seek to permit the point source emission of surface water run-off to a tributary of the Fylls Brook. SUEZ propose to retain the discharge location of the existing discharge permit, identifying it as “Discharge 1”. An updated monitoring schedule is proposed, as presented in Table 5-4.

Table 5-4: Proposed Surface Water Monitoring Schedule

Monitoring Location	Monitoring Frequency	Parameter
Discharge 1	Monthly	Electrical conductivity, ammoniacal nitrogen, pH, chloride, suspended solids
	6 monthly	As above plus Calcium, iron, magnesium, manganese, potassium, sodium, sulphate, total oxidised nitrogen, alkalinity, nickel, lead



5.5.1 Surface Water Compliance

As discussed in Section 4.3, the current groundwater monitoring points are considered to be representative of background groundwater quality with the discharge point “Discharge 1” considered to be the ultimate discharge point for groundwater.

It therefore serves to set action levels and compliance limits for Discharge 1, which are presented in **Error! Reference source not found.**

Table 5-5: Proposed Action and Compliance Limits for Surface Water Discharge 1

Determinand	Proposed Action Limit (mg/l)	Proposed Discharge Compliance Limit (mg/l)
Flow Rate*	N/A	2,880m ³ /day
Suspended Solids*	N/A	40
Lead	N/A	0.0002
Nickel	0.0038	0.012
Chloride	64	120
Amm. Nitrogen*	0.61	1.2
Notes:	The above limits are only applicable to flowing discharge(s) from the site through point Discharge 1. Lead – No control level as hazardous. Compliance Limit set at typical LOD for labs (0.0002mg/l). Nickel – Control level set at average conc. (SW3 and SW4) plus 2 standard deviations. Compliance limit set at proposed EAL, i.e. at 0.012mg/l. Chloride – Control level set at average conc. (SW3 and SW4) plus 2 standard deviations. Compliance limit set at 116 mg/l, equivalent to Groundwater action limit. *: Determinands and limits in current discharge consent (for pumped groundwater) Amm. Nitrogen – Control level set at average conc. (SW3 and SW4) plus 2 standard deviations. Compliance limit set at 1.2 mg/l, equivalent to proposed groundwater EAL and maximum observed in surface	

Any exceedance of the proposed action or compliance limits will trigger site specific contingency actions which are outlined in Section 4.5 below.

5.6 Amenity Monitoring

Amenity monitoring at the Site will consist of daily checks to confirm control measures implemented at the Site are effective. Findings of amenity monitoring will be recorded within Suez online systems. Monitoring will consist of:

- Daily checks of the Site and its boundaries for evidence of windblown litter.



- Continuous visual monitoring by Site operatives to ensure that dust emissions are not leaving the Site boundary as detailed in the Dust Emissions Management Plan prepared as part of the EP application.
- Continuous audial monitoring by Site operatives to ensure that noise emissions are not excessive by mitigation measures failing. Periodic noise monitoring will be carried out in accordance with the NIA and NMP.

There are no specific amenity monitoring points defined at the Site for dust and litter. Monitoring can be undertaken at any area within the EP boundary.

5.7 Topographical Survey

A topographical survey of the Site will be undertaken once the deposit for recovery activities have been completed to demonstrate the required profile has been achieved. The topographical survey will be provided as part of the application to surrender the EP at the end of the works.



6.0 Site Condition Report

A Site Condition Report (SCR) is only necessary for a site, or an area of a site, where waste is not being permanently deposited.

There is an area of the Site that will not undergo the permanent deposit of waste, with its location within the EP boundary shown in

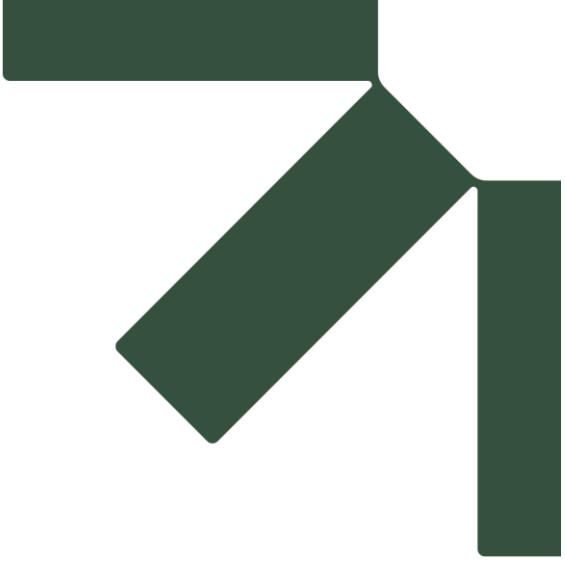


As such, a SCR (402.065294.00001_SCR) has been prepared for this area and is included within the EP application as Section 12.



Figure 6-1 Relevant areas of the proposed EP for the SCR





Appendix A Drawings

Clockhouse Quarry Restoration Environmental Permit Application

Environmental Setting and Site Design

SUEZ Recycling and Recovery UK Limited

SLR Project No.: 402.065294.00001

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A.1 List of Drawings

The list of drawings set out in Table A-1 comprises all of the drawings included as part of this ESSD.

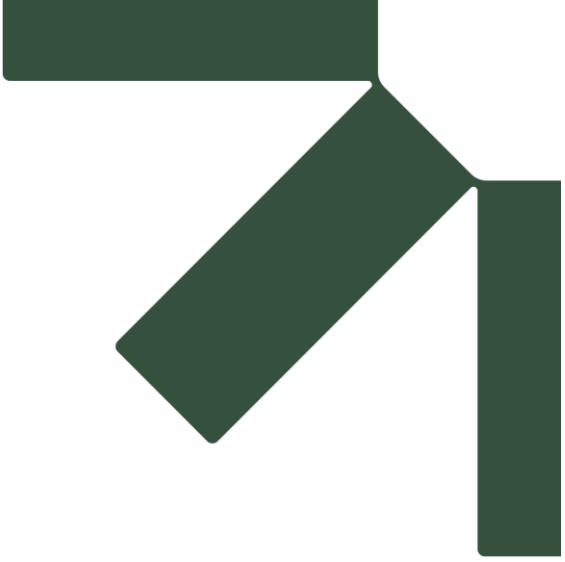
Table A-1: Drawings

Title	Drawing Ref.	Dated	Produced for
Site Location Plan	001	November 2025	EP Application
Environmental Permit Boundary and Layout Plan	002	November 2025	EP Application
Local Receptors	003	November 2025	EP Application
Natural and Cultural Heritage	004	November 2025	EP Application
Hydrogeological Conceptual Model	003	August 2025	EP Application – HRA
Restoration Scheme	002	November 2023	EP Application – HRA
Restoration Phasing	DR-0200	October 2025	Phasing
Surface Water Management Diagram	DR-0300 (Version S4-P3)	October 2025	Surface Water Management Plan
Site Location Plan	CH2/1 Rev0	November 2022	Planning Application – MO/2023/0789
Site Plan	CH2/2 Rev1	November 2023	Planning Application – MO/2023/0789
Capel Landfill & Clockhouse Quarry – Worked Out Areas	Clh-WOA-1122	November 2022	Planning Application – MO/2023/0789
The Capel Quarry Site Plan	CLK-QREST-0521-02	May 2021	Planning Application – MO/2023/0789
Section A-A Proposed Ponds	CH3/2 Rev P03	14 November 2023	Planning Application – MO/2023/0789
Section B-B At 15 Years Post Planting	CH3/3 Rev P04	31 October 2023	Planning Application – MO/2023/0789
Section C-C At 15 Years Post Planting	CH3/4 Rev P04	October 2023	Planning Application – MO/2023/0789
Section D-D Typical Section through Proposed Access Route	CH 3/5 Rev P02	14 December 2022	Planning Application – MO/2023/0789
Section E-E at 15 Years Post Planting	CH 3/6 Rev P03	14 November 2023	Planning Application – MO/2023/0789
Landscape Strategy Sheet 1 of 2	CH 3/1 Rev P09	September 2024	Planning Application – MO/2023/0789
Landscape Strategy Sheet 2 of 2	CH 3/1 Rev P01	November 2023	Planning Application – MO/2023/0789
Proposed Site Reception Area	CH 3/7 Rev P02	February 2023	Planning Application – MO/2023/0789
Heatmap for Infill Area	Clh-HMAP-1123-01	November 2023	Planning Application – MO/2023/0789



Title	Drawing Ref.	Dated	Produced for
Isopachyte Between Sept 2022 Survey & Proposed Infill Contours	CIh-ISO-0824-01	August 2024	Planning Application – MO/2023/0789
Proposed Infill Contours	CIh-INF-1223-01a Rev A	July 2024	Planning Application – MO/2023/0789
Sections Showing Proposed Infill Levels	CIh-INF-1223-02	December 2023	Planning Application – MO/2023/0789





Appendix B Nature and Heritage Conservation Screening

Clockhouse Quarry Restoration Environmental Permit Application

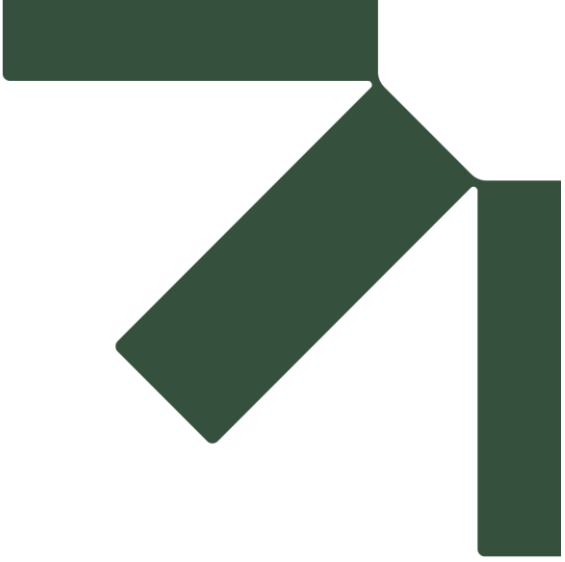
Environmental Setting and Site Design

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Appendix C Planning Permission MO/2023/0789

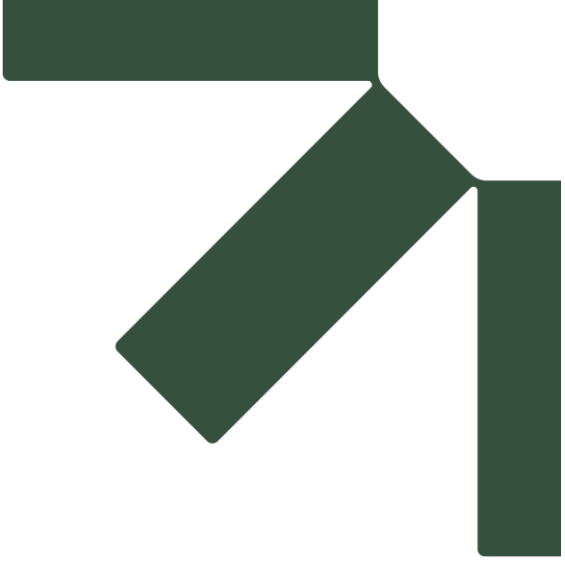
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Appendix D Existing Discharge Consent P/12567

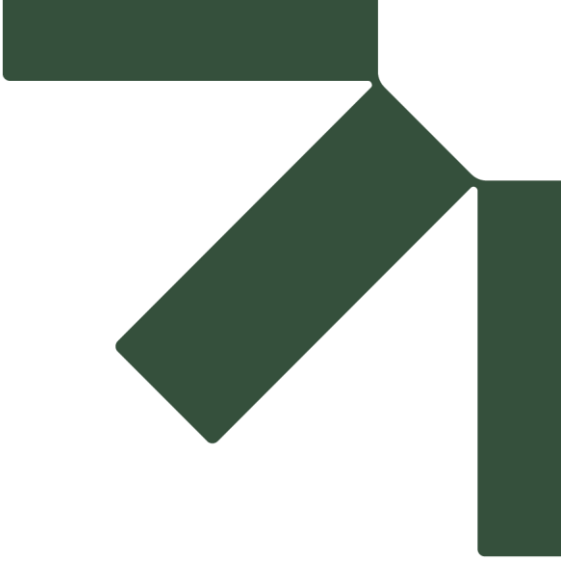
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Appendix E Flood Risk Assessment and Surface Water Drainage Strategy

Clockhouse Quarry Restoration Environmental Permit Application

Environmental Setting and Site Design

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