

# CONNINGBROOK BALLAST HOLE

**Environmental Permit Application**

**Environmental Setting and Site Design**

Prepared for: Brett Aggregates Limited

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- Drawing 001: Site Location Plan
- Drawing 002: Environmental Permit Boundary
- Drawing 003: Environmental Site Setting
- Drawing CON/187: Proposed Restoration Contours – Ballast Hole

## 1.0 Introduction

### 1.1 Report Context

Brett Aggregates Limited (Brett) has instructed SLR Consulting Limited (SLR) to prepare an Environmental Setting and Site Design (ESSD) in support of an Environmental Permit (EP) application. The application seeks approval for the use of waste in the restoration of a 'ballast hole' (arising from the historic removal of sand and gravel) near to the Conningbrook Recycling Facility (Ref: XP3394VP) owned and previously operated by Brett.

This report sets out the environmental setting and site design, and it should be read in conjunction with the supporting risk assessments submitted with this EP application. Herein the facility will be referred to as 'the Site'.

## 2.0 Site Details

### 2.1 Site Location and Access

Conningbrook is located to the northeast of Ashford and northwest of Junction 10 of the M20 in the county of Kent. The Site is accessed via Willesborough Lane, approximately 200m to the southwest. The National Grid Reference for the Site is TR 02929 43897.

The Site is located within the existing Conningbrook Quarry complex, now being decommissioned, close to the former mineral processing area and areas of historic mineral extraction, at the location shown on Drawing 001. Directly to the north is a railway line and beyond is agricultural and open ground. To the east is the Conningbrook Recycling Facility (now being decommissioned) and beyond lies the Conningbrook Lakes Country Park which is currently undergoing development to construct residential properties and recreational facilities. Open ground is located directly to the south and beyond is the Julie Rose Stadium and the A2070. To the west of the site is the railway and A2070 with areas of open ground. Beyond to the west is residential properties within Ashford.

A summary of the potentially sensitive environmental receptors located within the vicinity of the proposed boundary are presented in Table 2-1 and are illustrated on Drawing 003.

**Table 2-1  
 Identified Receptors**

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
<b>Sources Pathways and Receptors located within 500m of the EP boundary as shown on Drawing 003.</b>			
Railway line	Local rail network	West	Adjacent
Ares of open ground	Open ground	North and south	Adjacent
Conningbrook Lakes Country Park Development Area	Country Park	East	Adjacent
Julie Rose Stadium	Recreational Facility	South	20
A2070	Local road network	West	50
Premier Foods Batchelors Factory	Commercial and Industrial premises	Southwest	90
Surface water bodies associated with historic quarrying activities	Surface Water Feature	North, east and south	90
Willesborough Road	Residential	West	110
Conningbrook Manor	Residential	South	240
River Great Stour	Surface Water Feature	East	280
Principal Aquifer	Aquifer Designation	N/A	N/A
<b>Cultural and Natural Heritage identified receptors located within 1km of the EP boundary as shown within Appendix ERA1 and on Drawing 003.</b>			
Conningbrook Manor	Listed building	South	240

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Great River Stour	LWS, Protected species and eel migratory route	East	280
Ancient Woodland	Ancient woodland	East and south east	950

## 2.2 Ecology

### 2.2.1 European/International Sites

The Multi-Agency Information for the Countryside (MAGIC)<sup>1</sup> website has been accessed to determine the presence of any European or Internationally designated sites within a 1km radius from the Site's EP boundary. This search confirmed that there are none of the following within 1km of the Site's boundary:

- RAMSAR sites;
- Special Area of Conservation (SAC);
- Sites of Scientific Interest (SSSI); and
- Special Protection Areas (SPA).

### 2.2.2 Nationally Designated Sites

The MAGIC map website has been assessed to determine the presence of any Nationally Designated sites within a 1km radius from the Site's EP boundary. The search identified the following:

- Ancient Woodland – numerous pockets of ancient woodland are located to the east and southeast of the site. The closest pocket of ancient woodland is approximately 950m from the site's boundary.

The EA screening (Appendix ERA1) identified the following within 1km from the Site's boundary;

- Local Wildlife Site (LWS) – the River Great Stour is a designated LWS which is located to the east of the site; and
- The River Great Stour is protected for European eel and is classified as a European eel migratory route.

The searches confirmed that there are none of the following within 1km of the Site's boundary;

- National Nature Reserves (NNR);
- Local Nature Reserves (LNR);
- Areas of Outstanding Natural Beauty (AONB); and
- National Parks.

## 2.3 Cultural and Heritage

Searches on the MAGIC map website has also confirmed that there are none of the following within 1km of the Site's boundary:

- National Forest;

<sup>1</sup> Multi-Agency Information for the Countryside – Available at: <http://www.magic.gov.uk>, accessed August 2019.

- Schedule Monuments;
- World Heritage Sites;
- Registered Parks and Gardens; and
- Registered Battlefields.

There are several Grade II listed buildings within 1km of the Site's boundary, as shown on Drawing 003. The closest of which is Conningbrook Manor, located 240m to the south.

## 2.4 Site Classification

The use of waste for the restoration of the ballast hole is fully detailed within the approved Waste Recovery Plan (WRP).

The activities at the site will be regulated under the Environmental Permitting (England and Wales) Regulations 2016.



## 3.0 Source Term Characterisation

### 3.1 Site Development

#### 3.1.1 Historical Development

The oldest available historic maps, dating back to 1871, indicate that the ballast hole was a developed feature at this time covered with woodland. There has been no development of the ballast hole since 1871 as the area is still comprised of woodland.

The area surrounding the ballast hole, but still within the proposed boundary comprised of open/agricultural land from 1876 to 1993. From 1993, sand and gravel quarrying activities are shown within the proposed permit boundary and the surrounding area.

#### 3.1.2 Proposed Development

This EP application seeks to authorise the use of suitable imported waste materials, as a replacement for non-waste construction material in the restoration of the ballast hole to create an area of useable land for the aggregate facility or for the future development of residential properties.

The ballast hole will be restored in line with surrounding contours and will incorporate imported waste materials in accordance with the following profile:

- Up to 4.5m depth imported waste materials; and
- 0.6m depth soil/soil-forming materials.

The proposed restoration of the land is illustrated on Drawing CON/187 (Proposed Restoration Contours – Ballast Hole).

Key points regarding the proposed restoration are as follows:

- Waste accepted to site may be screened or crushed on a campaign basis to create material suitable for placement into the ballast hole;
- A 0.6m capping or 'deter to dig' layer is required to be placed over the entire site. Rather than importing this material, Brett propose to strip 0.6m of material at the base of the ballast hole, before waste material is deposited. This site won material will be temporarily stockpiled in readiness for use as the capping layer once deposition is complete;
- The storage of the capping material will take place in mounds and placed around the area to be filled;
- Waste material stored at the adjacent Brett owned Conningbrook Recycling Facility is a potential source of material for the site and will be subject to the criteria detailed in the Waste Acceptance Criteria (WAC) and Waste Acceptance Procedure (WAP); and
- Imported restoration materials followed by site derived capping materials will be placed progressively within the ballast hole to levels that comply with the proposed restoration profile.

### 3.2 Quantity of Permitted Wastes

The volume of material estimated to restore the Site in accordance with the proposed final landform is approximately 28,031m<sup>3</sup>. Assuming an average density of 1.75t/m<sup>3</sup>, the mass of imported material will be approximately 49,054 tonnes.

### 3.3 Permitted Waste Types

The proposed waste types to be accepted on site are shown in Table 2-1 below.

**Table 3-1  
 Proposed Waste Types**

Waste	Code Description
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 09	Other construction and demolition wastes
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION / INDUSTRIAL WASTE
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

### 3.4 Consideration of Schedule 22 of the EPR 2016

There are no direct or indirect discharges to groundwater proposed as part of the activities.

## 4.0 Pathway and Receptor

### 4.1 Geology

A review of the British Geological Survey (BGS) map<sup>2</sup> reveals that the Site is underlain by a bedrock of Folkestone Formation (sandstone). The bedrock is indicative of an area previously dominated by shallow seas. For the majority of the Site no superficial deposits have been recorded. However, for a small proportion of the north of the Site the superficial deposits have been classified as Head (clay and silt) which is indicative of an area previously dominated by subaerial slopes. For the far east of the Site the superficial deposits have been classified as River Terrace Deposits (sand and gravel).

There have been no previous site investigations carried out on Site.

### 4.2 Hydrology

Surface water bodies associated with historic quarrying activities are located to the north, east and south of the Site's boundary as illustrated on Drawing 003. The closest of these lies 90m south east of the Site's boundary. The River Great Stour lies to the east of the Site's boundary approximately 280m from the Site.

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 has a low probability of flooding<sup>3</sup>.

Surface Water quality is not monitored at or around the Site.

### 4.3 Hydrogeology

#### 4.3.1 Aquifer Characteristics

The bedrock underlying the Site is classified as a Principal Aquifer on the MAGIC map. These are layers of rock or drift deposits that have high intergranular flow and/or fracture permeability hence they usually provide a high level of water storage and may support water supply and/or river base flow on a strategic scale.

The Groundwater Vulnerability layer on the MAGIC map reveals that the Site lies within an area known for groundwater vulnerability classified as a Major Aquifer Intermediate.

#### 4.3.2 Water Resources and Abstractions

The Site is not located within a Source Protection Zone (SPZ) or within close proximity to one.

The Envirocheck report indicates there are 6 water abstractions within a 1km radius, the closest surface water abstraction licenses are 72m southwest of the Site.

#### 4.3.3 Groundwater Data and Flow

The historical Conningbrook Quarry Landfill (Ref; EAWML/19539) lies to the north of the ballast hole. The site ceased accepting waste in 2002 and the environmental permit has subsequently been surrendered. Therefore, groundwater monitoring that was undertaken for the site is available and relevant for the development of the ballast hole. Groundwater monitoring borehole CSBH04 is located on the south east corner of the ballast hole. Review of groundwater level monitoring data has shown the water level at this location to range between 32.913 and 34.611mAOD between December 2009 and June 2019, with the maximum elevation recorded in April 2014.

<sup>2</sup> British Geological Survey, Available at [www.bgs.ac.uk](http://www.bgs.ac.uk), accessed in August 2019.

<sup>3</sup> Flood Map for Planning <https://flood-map-for-planning.service.gov.uk>, accessed August 2019

Groundwater flow at the site was reviewed in the 2009 closure application and reported as being from west to east towards the River Great Stour, the ballast hole is therefore in the upgradient area of the wider site.

The survey completed of the ballast hole in 2018 shows the minimum current level to be 34.57

## 4.4 Man-made Subsurface Pathways

Given the undeveloped nature of the ballast hole, there are unlikely to be any man-made pathways associated with underground utilities, field drains, mine workings or boreholes. The previous quarrying activities undertaken adjacent to the Site are not anticipated to have any subsurface pathways in close proximity to the proposed EP boundary.

## 4.5 Receptors and Compliance Points

### 4.5.1 Groundwater

There is no proposed groundwater monitoring on the Site.

### 4.5.2 Surface Water

Surface water features are identified in Section 4.2 above. Due to the nature of the proposed operations, no surface water monitoring is required.

### 4.5.3 Amenity (Nuisance and Health issues)

All sensitive receptors within 500m of the Site have been outlined in Table 2-1. Furthermore, statutory and non-statutory designated sites within 1km have also been identified. The amenity and accident risks to these receptors are considered in depth in the Environmental Risk Assessment (ERA) included in Section 6 of this EP application. The compliance point for amenity issues is considered to be the permit boundary.

## 5.0 Pollution Control Measures

### 5.1 Site Engineering

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

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).

The activities to be carried out will be managed and operated in accordance with the Operating Techniques (OT) document included in Section 7 of this EP application.

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.

#### 5.1.1 Site Clearance

The ballast hole currently consists of an area of mature trees within a hollow. The trees will be cleared from site under the relevant permissions and sent offsite to be reused. A 0.6m capping or 'deter to dig' layer is required to be placed over the entire site. Rather than importing this material, Brett propose to strip 0.6m of material from the base of the ballast hole during the site clearance. This site won material will be temporarily stockpiled in readiness for use as the capping layer once deposition is complete.

The storage of the capping material will take place in mounds and placed around the margins of the area to be filled to provide visual and acoustic screens.

#### 5.1.2 Capping

As stated in Section 5.1.1 above, a 0.6m capping or 'deter to dig' layer will be placed over the entire site comprised of site won material.

### 5.2 Restoration

Imported fill materials followed by site derived capping materials will be placed progressively within the ballast hole to levels that comply with the proposed restoration profile as shown on Drawing CON/187. The site will be restored to useable land for the aggregate facility (concrete hardstanding) or for the future development of residential properties. The restoration profile will have a minimum elevation of 35.5mAOD to the north of the site rising to a maximum elevation of approximately 39.5mAOD to the south of the site.

### 5.3 Management

#### 5.3.1 Surface Water Management

Due to the nature of the operations on site no surface water management is required.

### 5.4 Post Closure Controls (Aftercare)

Upon completion of the restoration, the site will be utilised for the aggregate facility or developed as residential properties as per the relevant planning permissions.

Following completion, the site's condition will be monitored until such a time that it is considered the environmental permit can be surrendered.

With regards to the conditions when permit completion will be attained, these will be satisfied when the site no longer has the potential to cause damage to, or deterioration of, the environment and risk to human health.

## 6.0 Monitoring

### 6.1 Weather

#### 6.1.1 Rainfall

The annual rainfall recorded at the two closest Met Office<sup>4</sup> stations to the Site for 2018 varies by 69.8mm, as detailed in Table 3 below. The average annual rainfall based on records from the 2 closest weather stations is 702.1mm.

**Table 6-1**  
**Rainfall Statistics**

Month	Average Precipitation (mm)	
	Eastbourne	Manston
January 2018	83.9	68.2
February 2018	49.0	44.2
March 2018	80.5	77.4
April 2018	68.9	71.0
May 2018	39.2	43.4
June 2018	1.9	7.6
July 2018	27.3	21.8
August 2018	87.1	73.2
September 2018	37.2	45.2
October 2018	33.3	47.0
November 2018	113.1	108.8
December 2018	115.6	59.4
Annual Total	737.0	667.2
<b>Annual Average</b>	<b>702.1</b>	

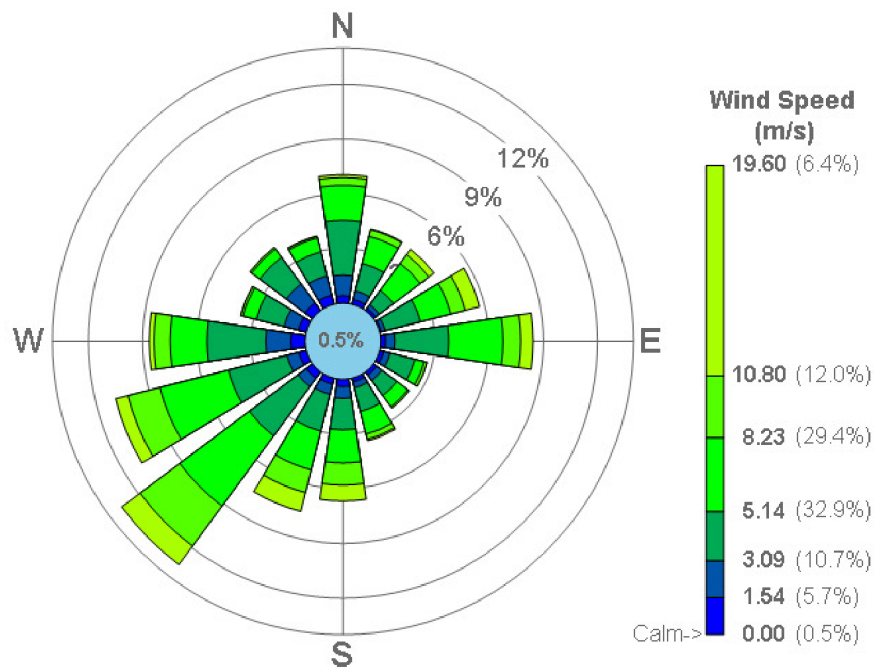
The ongoing monitoring of rainfall is not considered to be applicable to operations on site.

#### 6.1.2 Wind

Figure 6-1 shows the wind patterns in 2018 as identified by the Lydd meteorological station. The most prominent wind direction is from the southwest to the northeast. Winds from the west and east are frequent with winds from all other directions being relatively infrequent.

<sup>4</sup> <https://www.metoffice.gov.uk/research/climate/maps-and-data/historic-station-data> Accessed August 2019

**Figure 6-1**  
**Wind Rose Lydd Meteorological Station, 2018**



Ongoing monitoring of wind speed and direction will be carried out in accordance with the Dust Management Plan (DMP) included in Section 9 of this EP application.

## 6.2 Gas Monitoring Infrastructure

Gas monitoring infrastructure is not considered to be required on site as, following the surface strip, all material will be placed above ground. As shown in Section 3.1.1, there has been no development of the site or alteration to ground levels since the earliest available maps from 1871.

## 6.3 Gas Monitoring

For the reasons stated in Section 6.2 above, gas monitoring is not considered necessary on site.



## 7.0 Site Condition Report

A Site Condition Report (SCR) has been completed and is included in Section 8 of the EP application. Since the requirement to submit a SCR does not apply to areas of the site which will be subject to permanent deposits of waste, the SCR covers land located to the east of the ballast hole which is clearly illustrated on Drawing 002.

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