# Appendix i

# Non-Technical Summary

Aceblade Limited

# Elland Quarry, Rastrick

# Non-Technical Summary

2111ACE-NTS v2

May 2026

Vertase FLI

Contaminated Land, Brownfield & Environmental Contracting

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# 1.0 Introduction

## 1.1 Background

1.1.1 Vertase F.L.I. Limited (VertaseFLI) has been employed to complete the application for a Bespoke Deposit for Recovery Permit for restoration works at Elland Quarry, Lower Edge Road, Rastrick (site) on behalf of Aceblade Limited (client).

1.1.2 The duration of the proposed restoration works will be dependent on the availability of suitable material but it is expected to take in the region of 3 years.

1.1.3 A waste recovery plan, prepared by Cromwell Mining Consultant dated April 2022 (ref: 22-04-420 Rev B), has been submitted to the Environment Agency who have confirmed the works described herein are recovery.

1.1.4 This site is a former quarry and is centred on grid reference SE 12920 21242 and covers an area of approximately 85,000m$^2$. The quarry comprises of two voids which vary in depth but at the deepest point, in the northeast of Void 1, is approximately 36m below the surrounding ground level (140mAOD).

1.1.5 The boundary to the site is defined by fencing and vegetation in the form of hedges and mature and semi-mature trees. Mineral extraction has advanced to the very edge of land ownership in the north and east, resulting in exposed sheer rock faces.

1.1.6 Land uses adjacent to the site include Lower Edge Road to the north, residential properties to the northeast and west, and agricultural fields to the south and southeast.

1.1.7 A small area of pooled water is located at the base of the quarry in the northeast of the site. The water consists of perched run-off/collected rainwater which drains to this lowest area. There is no evidence of a groundwater table within the quarry void.

1.1.8 All services enter the site at the northwest corner, off Lower Edge Road. Services terminate within the compound area site in the northwest. No services encroach in the quarry voids or haul roads, therefore, the restoration/recovery operation will not impact services.

1.1.9 The area and site boundary of the works is as shown on drawing D2111_01 enclosed at Appendix ii of the Management System document, ref: 2111-MS v2.

1.1.10 The central area of the site, outside of the void footprint has previously been filled under a surrendered waste management licence (WML). The WML reference is EAHLD04108 and the area defined by the WML is shown on drawing D2111_01. The WML was held by Powergen plc with input taking place between July 1978 and December 1985 and it is understood they imported Pulverised Fuel Ash (PFA) for use as restoration materials. The presence of PFA in the centre of the site has been confirmed through site investigation.

1.1.11 The site also currently operates a Standard Rules Permit SR2010 No.12 (Treatment of waste to produce soil, soil substitutes and aggregate) permit no. EPR/WE2696AC in the area defined on Drawing D2111_01. The standard rules permit overlies the WML and it is the intention to continue to operate the waste treatment area to provide suitable waste to infill the voids under the deposit for recovery permit.

1.1.12 The WML lies adjacent to the southern edge of Void 1 and the eastern edge of Void 2. The waste deposited under the WML does not encroach into the base of the voids.

1.1.13 Total restoration of the void cannot be achieved solely with the stockpiles of quarry overburden as around 40% of the geological material has been removed as block and sandstone aggregate product. Therefore, import of material is required.

## 1.2 Planning Context

1.2.1 The site was granted planning approval as a mineral extraction site in 1948. This consent has been repeatedly reviewed and updated by the Local Planning Authority. The most recent review was completed in 2021 (ref 16/00439/MCO). This planning approval requires the site to be returned to a pre-agreed condition and level, following the restoration plan detailed in the recovery plan drawings and cross sections included in Appendix A of the permit application submission.

1.2.2 Under planning condition number 26, restoration material can only include the overburden and mineral waste generated from quarry activity and inert waste imported to site.

### 1.3 Deposit for Recovery

1.3.1 As total restoration of the void cannot be achieved solely with the stockpiles of quarry overburden, import of material is required. Under planning condition number 26, restoration material can only include the overburden and mineral waste generated from quarry activity and inert waste imported to site.

1.3.2 It is proposed that the import of waste will be controlled by the Bespoke Deposit Recovery Permit that is the subject of this application. Imported waste will be accepted under conditions set out in the Vertase FLI Management System document, ref: 2111ACE-MS v2.

1.3.3 The site was granted planning approval as a mineral extraction site in 1948. This consent has been repeatedly reviewed and updated by the Local Planning Authority. The most recent review was completed in 2021 (ref 16/00439/MCO). This planning approval requires the site to be returned to a pre agreed condition and level, following the restoration plan detailed in the recovery plan drawings and cross sections included in Appendix A of the permit submission.

1.3.4 Total restoration of the void cannot be achieved solely with the stockpiles of quarry overburden as around 40% of the geological material has been removed as block and sandstone aggregate product. Therefore, import of material is required.

1.3.5 Under planning condition number 26, restoration material can only include the natural overburden, mineral waste generated from quarry activity and inert waste imported to site.

### 1.4 Filling sequence

1.4.1 Filling of the voids will commence in Void 1, following the existing haul road around the quarry face on the east and northern end gradually snaking around the void in layers as described below. This is include engineering and compaction of fill material into the voids and against the buttresses to create a stable fill that will settle evenly.

1.4.2 The sequence of filling is illustrated in the recovery plan drawings and cross sections in Appendix A of the permit application.

1.4.3 The sequence of materials placement is summarised as follows:

1) Drainage base: Placement of large hewn quarry stone to form a drainage blanket across the mudstone at the base and sides of the quarry to prevent pooling and encourage dispersion of water across the area. Thickness of stone is variable due to the size of the blocks but will typically comprise 250 to 500mm gravel.

2) Fill layer 1 (natural arisings overburden): Placement of shale and mudstone arisings stored on site for restoration to c. 4m thickness. Material will be placed in a maximum of 1m layers (more typically 0.5m) and compacted by excavator to achieve a permeability of at least $10^{-7}$m/s.

3) Fill layer 2 (natural arisings): Shale and mudstone arisings will be used to form 1:1.5 slopes as buttresses around the edge of the quarry to stabilise the slopes before the next layer of fill is placed. Material will be placed in a maximum of 1m layers and compacted by excavator to achieve a permeability of at least $10^{-7}$m/s.

4) Imported & treated inert waste will be placed upon the up built base and against the engineered buttresses, in a maximum of 1m layers, and compacted by excavator.

5) Inert treated waste and any remaining mineral arisings will be used to raise level to within 1m of the final restored level. A final layer, minimum 0.5m of natural subsoil (sourced from both on site and imported) will be placed across the final layer of compacted material, following good quarry practice for restoration.

6) Grading will be undertaken between the current voids and the previously infilled voids to provide a final and stable, integrated landform.

7) The final finishing and planting of the restoration will be agreed with the Local Planning Authority to complement the intended future use of the restored site.

1.4.4 Hard coarse waste material will be selected for use as top dressing to support drainage and longevity of the haul roads and to provide layers

of drainage material behind engineered buttresses and slopes to prevent water build up and slippage.

1.4.5 The drainage base, fill layer 1 and fill later 2 will raise the base of the voids and cover the lower sides of the quarry to stabilise and create a safe working environment. This work will be done with clean natural quarry overburden already stored on site. The quarry overburden (shale and mudstone) will the placed in layers and compacted to achieve a permeability of at least $10^{-7}$m/s.

1.4.6 The design is focused on providing a stable engineered infill and safe working environment which is essential given the unstable quarry faces in Void 1 (Cromwell Wood Stability Risk Assessment Report 25-EESRA-01 25-005-115-R-001

1.4.7 However, while not designed to create a formal landfill liner, the drainage base and fill layers 1 and 2 will isolate imported wastes from any potential groundwater ingress at the base of the voids and reduce the possibility of rainwater infiltrating below the waste mass, preventing migration off site through the quarry wall.

# 2.0 Waste Operation

## 2.1 Waste Origin

2.1.1 Imported waste will be accepted under conditions set out in the Site Vertase FLI Management System document, ref: 2111ACE-MS v2. The origin of the waste is not yet confirmed and with the volumes required and the duration of the works the material will come from multiple sources. It is assumed that the majority of these sources will be local to the site.

## 2.2 Waste Types

2.2.1 The waste types that will be accepted at the site are outlined in Sections 6 of the Vertase FLI Management System document, ref: 2111ACE-MS v2.

2.2.2 Waste to be used in the recovery operation align with the waste permitted under the standard rules permit SR2015 No.39.

## 2.3 Total volume of waste

2.3.1 The volume of imported material will be approx. 217,200m$^3$ to achieve a minimum level of 165m AOD as shown on the restoration plans.

## 2.4 Off-Site Disposal

2.4.1 Based on the Waste Acceptance Procedures outlined in the Vertase FLI Management System document, ref: 2111ACE-MS v2, it is not envisaged that unacceptable waste will be imported to site, since most imports will first be accepted and treated under the Standard Rules Permit SR2010 No.12 (Treatment of waste to produce soil, soil substitutes and aggregate) permit no. EPR/WE2696AC before being moved to the recovery area for placement.

2.4.2 However, the management of non-conforming loads and waste failing to meet the waste acceptance criteria is set out in Section 6 Vertase FLI Management System document, ref: 2111ACE-MS v2.

2.4.3 All unsuitable wastes will be removed from the site to a suitable permitted waste facility under the waste duty of care code of practice.

# 3.0 Monitoring and management

## 3.1 Fugitive emissions

3.1.1 Without implementing control measures during the deposit operations, the fugitive emission risks associated with the permitted activities would range from 'low' to 'medium' (Table 3-1). These risks have been reviewed in the Environmental Setting and Site Design report (App F Section 4 report 202413_1a).

## 3.2 Summary of Control Measures

3.2.1 The mitigation measures for emissions and monitoring controls are summarised in Sections 13 & 14 of Vertase FLI Management System document, ref: 2111ACE-MS v2.

3.2.2 The control measures detailed in the management system that shall be employed during implementation of the waste treatment facility to ensure that all risks identified in Table 3-1 remain 'low' are summarised in Table 3-2.

**Table 3-1. Risks associated with the deposit for recovery and waste treatment operation without implementing control measures**

| Hazard | Risk (combination of likelihood and consequence) |
|---|---|
| Noise emissions during vehicle movements and engineering | Low |
| Vibration emissions during vehicle movements and engineering | Low |
| Pests | Low |
| Contaminants in stockpiled soils leaching to ground | Low |
| Odour emissions causing nuisance and loss of amenity | Low |
| Contaminants in surface water runoff causing contamination of land and groundwater | Low |
| Contaminants in surface water runoff causing harm to human health via dermal contact | Low |
| Particulate emissions released during tipping and engineering causing harm to human health via inhalation | Low |
| Particulate emissions causing windblown nuisance and deposition onto adjacent property | Medium |
| Litter/mud emissions from site vehicles causing nuisance, loss of amenity and road traffic accidents | Medium |
| Unauthorised site access leading to direct physical injury | Medium |
| Unauthorised site access and vandalism leading to uncontrolled release of polluting materials into the environment | Medium |
| Accidental spillage of stored chemicals (e.g., oils, diesel) causing release and contamination of land and groundwater | Medium |

**Table 3-2. Summary of control measures to be implemented during deposit for recovery operation to ensure all risks are low**

| Control Measures to be Implemented |
|---|
| Use of dedicated haul routes on site |
| Haul road cleaning and maintenance as required |
| Use of haulage vehicle coverings as required |
| Use of Personal Protective Equipment (PPE) |
| Toolbox talks to operators and site staff |
| Adherence to the dust management plan |
| Use of trained and competent plant operators and site staff |
| Regular inspections of site activities and control measures infrastructure by a technically qualified and competent person |
| Chemical spill kits to be made continuously available |
| Use of dust suppression techniques as required (including water sprayers, bowsers and spray bars) |
| Use of dust monitoring equipment |
| Cease dust-generating operations during prolonged dry or windy periods |
| Use stockpile coverings where necessary |
| Use a wheel wash to remove debris from road vehicles leaving site |
| Use of a road sweeper as required |
| Maintain a good standard of site cleanliness |
| Adhere to set working hours |
| Maintain a standoff from the site boundary adjacent to dwellings and arrange site operations to avoid noisy activity adjacent to dwellings |
| Selection and use of appropriate plant |
| Use of appropriate site security and warning signs |
| Chemicals to be stored within 110% spill capacity storage |
| Plant refuelling to be undertaken on impermeable surfaces |

## 3.3 Environmental Monitoring

3.3.1 Baseline monitoring for ground gas and groundwater has been undertaken.

3.3.2 Continued monitoring and assessment of groundwater and ground gas, both during the operation and following restoration is set out in Section 15 of the management system, ref: 2111ACE-MS v2, and has been summarised briefly below.

**Groundwater**

3.3.3 A groundwater conceptual site model has been developed and is described in the groundwater assessment report 202413/2a (Appendix E of the permit submission). The groundwater CSM is summarised as follows;

- The area is directly underlain by the Elland Flags sandstone, a Secondary A aquifer
- No continuous water table has been identified in the quarry voids but infiltrated water is anticipated to flow with the geological dip towards the north north-east.
- There are no viable springs, abstractions or surface water receptors
- Only inert waste will be used in the recovery activity, and waste will be placed in 0.5 to 1m layers and compacted. The fill sequence is summarised in section 1 of this report.

3.3.4 There are no identified contaminant linkages for the proposed activity. Monitoring is precautionary rather than protective. Environmental protection is afforded by management of waste acceptance and inclusion of low-risk waste streams only.

3.3.5 The CSM informs the design of the monitoring network and confirms that a quantitative groundwater risk assessment is not required.

3.3.6 The Annual Average and Maximum Allowable Concentration values proposed for the permit are based on upgradient groundwater quality. The DfR activity cannot change or reduce the upgradient loading in groundwater and the offsite sources of potential contamination arise from the extensive quarrying and landfilling activities. However, the baseline is established form 12months of monitoring so should reflect seasonal fluctuations and a relatively steady state.

3.3.7 Monitoring frequency, reporting and critical concentrations are set out in Section 15 of Vertase FLI Management System document, ref: 2111ACE-MS v2. Critical concentrations should be reviewed annually to ensure background water quality remains consistent. The purpose of the monitoring is to ensure no additional loading to water draining below the voids from the DfR activity. Groundwater quality in down

gradient concentrations should be the same or less than recorded in upgradient wells.

3.3.8 Given the limited water available for sampling during the baseline assessment, it is highly likely that downgradient wells will be dry for much of the year.

**Gas**

3.3.9 Background gas monitoring has been completed alongside groundwater sampling in boundary wells and to date methane concentrations are all below 1%v/v and carbon dioxide concentrations are below 5%v/v.

3.3.10 A Ground Gas Risk Assessment and Monitoring Plan has been produced by Cromwell Wood Environmental (dated April 2022), this is further expanded in Section 15 of Vertase FLI Management System document, ref: 2111ACE-MS v2.

3.3.11 Once the recovery operation in each void is completed and levels have been bought to those agreed in the restoration plan, three in waste gas monitoring wells should be installed in void 1 and two should be installed in void 2.

3.3.12 Monitoring frequency, reporting and critical concentrations for ground gas are set out in Section 15 of Vertase FLI Management System document, ref: 2111ACE-MS v2.

# 4.0 Responsibilities & technical standards

## 4.1 Staff Competence

4.1.1 The permit will be held by Rand Smith LLP and managed by VertaseFLI, an experienced land remediation contractor. The technical competent manager for the treatment faciality will be a VertaseFLI employee and they will hold a relevant and up to date WAMITAB certificate which demonstrates their competence.

4.1.2 An organogram for the management of the treatment works is enclosed in the Management System, Appendix ix. In the event that there are any staff changes, they shall be replaced with someone of equal or greater experience.

4.1.3 Many of VertaseFLI employees are members and chartered professional of relevant associations such as the Geological Society, CIWEM and ICE. These employees attend regular presentations and seminars as appropriate in order to ensure their knowledge and competence is kept fully up to date.

4.1.4 Staff employed to work on the permitted facility will fall into one of two categories, hired plant operators and VertaseFLI employees. No sub-contractors will be employed for this project although the permit holder may employ an independent consultant to provide 3rd party oversight and/or specialist advice.

4.1.5 The management system supporting the permitted faciality has been prepared and will be audited in accordance with VertaseFLI Integrated Management System (IMS) which is accredited to ISO 9001, ISO 14001 and OHSAS 18001. Copies of relevant certificates are enclosed in Appendix vi of the Management System.

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