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4.0 THE PROPOSED DEVELOPMENT

4.1 Introduction

4.1.1 The 'Proposed Development' comprises the extraction and export of up to 1 million tonnes per annum (tpa) of secondary aggregate materials from the Gale Common Ash Disposal Site as part of a minerals planning application submitted to North Yorkshire County Council (NYCC).

4.1.2 This chapter covers the following matters:

- overview of the Proposed Development;
- site history and the existing situation;
- operation;
- management and mitigation measures;
- construction; and
- restoration.

4.2 Overview of the Proposed Development

4.2.1 The predominant extraction material will be pulverised fuel ash (PFA); however, some areas of the Gale Common Ash Disposal Site contain colliery shale, which would also be extracted and retained on Site for restoration purposes.

4.2.2 PFA of all qualities can be used in a range of applications, such as road construction, embankments, general fills, grouting, cement and breeze blocks. It is classed as a secondary aggregate, the use of which is supported in principle by planning policy at national and local level (please refer to Chapter 5 of ES Volume I for more detail on relevant planning policy).

4.2.3 Figure 3.3 (ES Volume III) shows the proposed extraction areas within the Site. Importantly, although the Site includes the entire Gale Common Ash Disposal Site, extraction will only occur within the following areas that have not yet been restored:

- Lagoons C and D;
- Stage II; and
- Stage III.

4.2.4 Stage I, which comprises the most prominent and fully restored part of the Gale Common Ash Disposal Site, will be retained in its current form and opened for public recreational access.

4.2.5 The Applicant carried out a comprehensive consultation exercise prior to submission of the planning application, including three stages of public information events and drop-in sessions, meetings with NYCC and technical consultees, and meetings with local stakeholders. The Applicant has received a number of comments in terms of how the Gale Common Ash Disposal Site should be managed and potential impacts mitigated, which, along with the findings of the EIA, have fed into the final design of the Proposed Development.

4.2.6 The Proposed Development includes a number of management and mitigation measures, some of which will be implemented from the commencement of operations and others in a phased manner as and when they are required. Further details regarding the phased implementation of management and control measures (including triggers), are provided under Section 4.5 Management and Mitigation later in this chapter.

4.2.7 The measures include proposed upgrade works to Cobcroft Lane/ Whitefield Lane, which will form part of the main route from the Gale Common Ash Disposal Site to the M62. The works include localised repairs and widening of the existing road and the re-alignment of the eastern end of Whitefield Lane where it meets the A19, to position the road further away from residential properties on Whitefield Lane in order to mitigate potential noise and amenity impacts from passing vehicles.

4.2.8 Figure 4.1 (ES Volume III) shows the short term layout of the Site and Figure 4.2 (ES Volume III) shows the long term layout of the Site and operational arrangements once further management and mitigation measures have been implemented.

4.3 Site History and the Existing Situation

4.3.1 The historic and existing operations at the Gale Common Ash Disposal Site mean that it already benefits from infrastructure geared towards processing and exporting material. It follows that only limited construction works are proposed in the short term for export of PFA to increase beyond the current level. The existing infrastructure includes the following:

- vehicle access onto Cobcroft Lane;
- internal haul roads linking to the different parts of the Gale Common Ash Disposal Site;
- weighbridge and security cabin adjacent to the highway access;
- wheel wash facility;
- HGV loading pad;
- excavation and mobile screening plant;
- office buildings and welfare facilities; and
- surface water drainage system.

4.4 Operation

4.4.1 Once operational, the Proposed Development will be focussed on a simple process of extraction, screening (and where necessary crushing), loading, and export by road.

4.4.2 The Proposed Development will initially utilise the existing infrastructure and management/monitoring protocols at the Gale Common Ash Disposal Site, with additional plant (such as screeners, excavation plant and dump trucks) and equipment (such as a jet wash) only added to ensure that the Gale Common Ash Disposal Site can operate efficiently at a larger scale following any grant of planning permission. It is proposed that as the export tonnage increases toward 1 million tpa, along with the intensity of the operation, additional infrastructure and management measures will be added to ensure that the Gale Common Ash Disposal Site can continue to operate efficiently, and any impacts are mitigated.

4.4.3 Further detail on the additional infrastructure and its phased implementation is provided in Section 4.5 Management and Control Measures below.

4.4.4 The remainder of this section explains the operational process of the phased extraction and export of material from the Gale Common Ash Disposal Site.

Main Activities

4.4.5 There are four main activities associated with the extraction and export of material from the Gale Common Ash Disposal Site, as follows:

- Activity 1: extraction;
- Activity 2: screening and potentially crushing;
- Activity 3: stockpiling and loading at the loading pad; and
- Activity 4: export off site.

4.4.6 These are described in turn below.

Activity 1: Extraction

4.4.7 Loading shovels or back actors (also known as excavators) will be used to dig out the material.

4.4.8 Where necessary (at the outer edges of the Gale Common Ash Disposal Site), soil will be removed from the extraction zone prior to extraction and stored appropriately within the Gale

Common Ash Disposal Site for later re-use during restoration. This is shown on the Phasing Plans which accompany the planning application.

Activity 2: Crushing and Screening

- 4.4.9 Screening plant will be used to screen the material to the required grade for export by separating out the lumps of material into smaller particles.
- 4.4.10 During excavation from Stage III mobile screeners are likely to be located near the excavation location, whereas during extraction from Stage II and Lagoons C and D, mobile or fixed screeners are likely to be positioned at the western end of Stage III near the loading pad (with the material transported to this location by dump trucks and the screens fed by loading shovels) (see Figure 4.1). Oversize material will be reprocessed by the screeners until the required grade is achieved.
- 4.4.11 For more compacted material, a crusher may also be required prior to screening. The crusher will be located near to the screeners.

Activity 3: Stockpiling and Loading at the Loading Pad

- 4.4.12 After screening, the material will be taken to the loading pad. Initially this is likely to be undertaken using dump trucks. If, following the expansion of the loading pad, a stacker conveyor is installed, the material is expected to be fed from the screeners to the stacker conveyor for stockpiling onto the loading pad.
- 4.4.13 At the loading pad, loading shovels will be used to load the HGVs. If, following the expansion of the loading pad, a stacker conveyor is installed (see Figures 4.2 and 4.6) this would allow HGVs to access the loading pad via a loop separating HGV and plant (dump truck and loading shovel) movements, reducing the need for HGV wheel washing.

Activity 4: Export Off Site

- 4.4.14 Whilst the Applicant is committed to considering the feasibility of sustainable transport modes such as rail and water when contracts are being set up (and the customer location, contract volume and contract duration are known), at present it is assumed that all export will be by road. A Sustainable Transport Feasibility Study has been undertaken and accompanies the planning application.
- 4.4.15 Operational traffic movements are described in Chapter 8: Traffic and Transport (ES Volume I). In summary, it is anticipated that during the operational phase of the Proposed Development, total HGV movements at the Gale Common Ash Disposal Site will be around 266 two-way HGV movements per day (133 movements in and 133 out), or 11 HGV arrivals and 11 HGV departures per hour on average, plus operational staff traffic for up to 47 site staff.
- 4.4.16 HGVs will enter and depart the Gale Common Ash Disposal Site via the existing site access on Cobcroft Lane (see Figure 4.1). Upon entry, HGVs will be granted access by security, assuming security checks are passed.
- 4.4.17 HGVs will pass over a weighbridge on arrival and before departure from the Gale Common Ash Disposal Site and, if necessary, on departure a wheel wash and/ or jet wash will be utilised to clean vehicles. Washing of every vehicle is not likely to be required as other measures will be implemented to prevent HGVs becoming dirty, such as maintenance of clean road surfaces within the Site. HGVs will not be allowed to leave the Gale Common Ash Disposal Site if they are found to be overweight or, on inspection, would distribute dirt/ debris on the public highway. As a further management measure, all vehicles will be covered to prevent material falling onto the public highway or other areas. These measures are the same as currently successfully employed at the Gale Common Ash Disposal Site (with the exception of the vehicle inspections and the jet wash, which will be installed to supplement the wheel wash).
- 4.4.18 A designated route for HGVs to reach the strategic road network (the M62) will be used, whereby during normal operation all HGVs use the route to the east of the Gale Common Ash Disposal Site along Cobcroft Lane/ Whitefield Lane to the A19, and north to the M62 (Junction

34). This route will be used, unless the route is not available for any reason (such as a temporary road closure) and where it is appropriate to use a different route for local deliveries.

- 4.4.19 The designated HGV route and measures to ensure HGVs from the Gale Common Ash Disposal Site do not distribute dirt/ debris on the public highway are detailed in the Operational Traffic Management Plan in Appendix 8A (ES Volume II). It is also secured as part of the draft Section 106 agreement submitted as part of the application.

Operational Staff

- 4.4.20 It is estimated that the Proposed Development will generate approximately 25-47 permanent jobs. It will therefore provide employment opportunities and help support the economy of North Yorkshire and the wider Yorkshire and Humber region.
- 4.4.21 The Proposed Development includes site offices and welfare facilities for operational staff. The existing facilities at the Gale Common Ash Disposal Site will be utilised initially, with extended/ improved facilities provided as operations intensify.

Hours of Operation

- 4.4.22 At present the Gale Common Ash Disposal Site's operational hours are Monday to Friday 07:00 – 17:00 and Saturday 07:00 – 12:00. In order to increase the rate of export up to 1 million tpa, working hours on site will be increased to seven days per week 05:00 – 21:00. As the export tonnage increases toward 1 million tpa, operational staff may work in two shifts (05:00 – 13:00 and 13:00 – 21:00).
- 4.4.23 The hours of HGV movements will be more limited than on site operating hours, to avoid out of hours HGV traffic on the local highway network and local community, with materials exports taking place between 07:00 and 19:00 Monday to Friday and 07:00 to 13:00 Saturday, with no HGV movements on Sundays or Bank Holidays.

Phasing and Volumes

- 4.4.24 The proposed extraction areas within the Gale Common Ash Disposal Site are illustrated in Figure 3.3 (ES Volume III). As discussed above in Section 4.2, extraction will only occur in Stage II, Stage III and Lagoons C and D. For the avoidance of doubt, no extraction will occur in the restored Stage I area.
- 4.4.25 Three-dimensional modelling using 'as built' drawings for the Gale Common Ash Disposal Site has been undertaken to provide detailed information on the phasing and timescales for extraction in each area, to estimate the volumes of material that will be extracted, and to determine how the topography of the Gale Common Ash Disposal Site will change through the extraction period.
- 4.4.26 The anticipated phasing of extraction is that the material in Stage III will be extracted first, followed by Stage II, followed by Lagoons C and D, although extraction may occur simultaneously in different areas of the Gale Common Ash Disposal Site.
- 4.4.27 It is envisaged that extraction in each area will proceed as follows (with timescales dependant on the rate at which extraction increases to 1 million tpa, and commercial contracts).
- Stage III contains the smallest amount of PFA (around 1.5 million tonnes). Ground levels in this area will be reduced from over 10 m Above Ordnance Datum (AOD) to around 8 m AOD. Extraction of this area is expected to take around two to three years.
 - Stage II contains the majority of the PFA to be extracted (around 17 million tonnes). Extraction will be carried out in stepped sections, or 'benches', gradually bringing the level of this area from a maximum of 69 m AOD to between 9 and 13 m AOD, although bunds around the Gale Common Ash Disposal Site will be maintained at higher levels than the working areas where possible during operations to provide screening. The colliery shale, known to be present in the lower levels of Stage II (placed for engineering purposes), will be used to re-contour and restore the landform around the retained Stage I area. Extraction of this area is expected to take around 17 to 20 years.

- Lagoons C and D is likely to be the last area to be extracted as these contain the wettest material. Around 4.5 million tonnes of PFA will be extracted from this area, bringing the level from around 25 m AOD to around 6.5 m AOD. Extraction of this area is expected to take around five to six years.

4.4.28 In total, the extraction is expected to take around 25 years, with around 23 million tonnes of PFA extracted over this period.

4.5 Management and Control Measures

4.5.1 The Proposed Development includes a number of management and control measures, some of which will be implemented from the start of operation (or as soon as reasonably practicable), with others to be implemented as and when the volume of material extracted and exported from the Gale Common Ash Disposal Site is set to increase. These later measures will be triggered by reaching certain extraction tonnages, or where appropriate (i.e. not required for environmental mitigation) will be decided by EPUKI from a commercial perspective.

4.5.2 Table 4.1 sets out the various measures and when they are to be implemented. The measures are split into the following categories:

- **Category 1** – Short Term Management and Control Measures, to be implemented before extraction goes beyond the 30,000 tonnes per year currently taken from the Site, or as soon as reasonably practicable, to manage and control the impacts of the Proposed Development, which will be secured by planning condition (see the Planning Statement for more detail) or form part of the draft Section 106 agreement;
- **Category 2** – Further Mitigation Above 400,000 Tonnes Per Annum Export to mitigate traffic effects on residents of Whitefield Lane, which forms part of the draft Section 106 agreement; and
- **Category 3** – Site Improvement and Re-configuration Works, to be provided on commercial decision by EPUKI or within a defined period of time, for the long term operation of the Proposed Development.

Table 4.1 – Management and Control Measures

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
Category 1 – Opening Management and Control Measures		
Wheel wash	The Gale Common Ash Disposal Site benefits from an existing wheel wash facility associated with the existing extraction operations. The facility has sufficient capacity to deal with the maximum number of HGVs required to extract 1 million tpa of material. The location is shown in Figure 4.1 (ES Volume III).	Available from the commencement of operations
Jet wash	An additional mobile jet wash facility to supplement the wheel wash. This will be used in the unlikely scenario that the wheel wash has not completely removed all debris. The indicative location is shown in Figures 4.1 and 4.2 (ES Volume III).	Provided from the commencement of operations
Protocol for monitoring vehicles prior to release onto the public highway	All vehicles exiting the Gale Common Ash Disposal Site will undergo a visual inspection. Any vehicle	Provided from the commencement of operations

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
	<p>deemed unclear/ carrying debris will be redirected to the wheel wash and/ or jet wash facility (see above). All HGVs will also be covered (sheeted) and CCTV cameras will be installed within the Gale Common Ash Disposal Site near the access to Cobcroft Lane to record the condition of vehicles.</p> <p>This is set out in detail in the Operational Traffic Management Plan (Annex P in Appendix 8A: Transport Assessment, ES Volume II).</p>	
<p>Dust management, including dampening down of surfaces during dry weather</p>	<p>Standard measures will be utilised, including water bowsers (tractor-mounted and/ or stationary). These impact avoidance measures are already employed at the Gale Common Ash Disposal Site and will continue to be utilised.</p> <p>Dust monitoring is also undertaken at the Gale Common Ash Disposal Site and an additional two monitoring locations will be added.</p> <p>Please refer to Appendix 9B: Dust Management Plan (ES Volume II) for more detail.</p>	<p>Provided from the commencement of operations</p>
<p>Dust monitoring</p>	<p>The Gale Common Ash Disposal Site benefits from existing monitoring stations and an associated protocol. The measures will be retained as part of the Proposed Development.</p> <p>Please refer to Appendix 9B: Dust Management Plan (ES Volume II) for more detail.</p>	<p>Provided from the commencement of operations</p>
<p>White noise reversing alarms for all plant on site</p>	<p>All plant used on site will be fitted with white noise reversing alarms (as opposed to beeping alarms) for noise mitigation purposes.</p>	<p>Provided from the commencement of operations</p>
<p>Plant and equipment to operate behind earth bunds</p>	<p>This measure will be implemented wherever possible, particularly during excavation in the southern part of Stage II and the eastern part of Lagoons C and D where noise sensitive receptors are located in the vicinity of the Gale Common Ash Disposal Site.</p> <p>Please refer to Chapter 10: Noise and Vibration (ES Volume I) for more detail.</p>	<p>Provided prior to the commencement of relevant operations</p>

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
<p>HGV route to M62 (Cobcroft Lane/ Whitefield Lane/ A19/ M62)</p>	<p>This route will be used at all times, unless the route is not available for any reason (such as a temporary road closure) or where it is appropriate to use a different route for local deliveries. HGVs arriving and departing the Gale Common Ash Disposal Site will be recorded on CCTV cameras to be installed within the Gale Common Ash Disposal Site near the access to Cobcroft Lane.</p> <p>This is set out in detail in the Operational Traffic Management Plan (see Annex P in Appendix 8A: Transport Assessment, ES Volume II).</p>	<p>Utilised from the commencement of operations</p>
<p>Surface water drainage</p>	<p>The Gale Common Ash Disposal Site benefits from an existing drainage system that will continue to be used. The Gale Common Ash Disposal Site is drained via a network of ditches to two settlement ponds near the pumping station in the north of the Gale Common Ash Disposal Site, to the west of the main access. The drainage system is designed to manage surface water and also dewatering of ash (which was pumped to the Gale Common Ash Disposal Site as a slurry).</p> <p>Water quality is monitored at various locations across the Gale Common Ash Disposal Site and the pH is adjusted if necessary, prior to water being pumped from the pumping station to the River Aire near Knottingley.</p> <p>Water from the drainage system will be used to supply the wheel wash facilities and water bowsers (as is the case at present).</p> <p>Further details are provided in the Surface Water Management section of the Flood Risk Assessment, which accompanies the planning application.</p>	<p>Drainage system to continue during operations</p>
<p>Soils to be managed and stored in accordance with best practice for future use in restoration</p>	<p>There are already a number of soil stockpiles within the Gale Common Ash Disposal Site. As these stockpiles have become vegetated and provide ecological habitats, it is not proposed to reuse these soils in</p>	<p>At all times during operations</p>

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
	<p>the final restoration of the Gale Common Ash Disposal Site.</p> <p>Soils present within the Gale Common Ash Disposal Site that are removed during the extraction operations will be managed and stored in accordance with best practice such that they can be used in the final restoration of the Gale Common Ash Disposal Site.</p> <p>Please refer to Appendix 11B: Outline Soil Management Plan (ES Volume II) for more detail.</p>	
<p>Localised repair works and widening along Cobcroft Lane/ Whitefield Lane, bend improvement on Whitefield Lane, and installation of advance warning near the Gale Common Ash Disposal Site entrance on Cobcroft Lane</p>	<p>The local community submitted comments on the Proposed Development during the pre-application stage to state that the road is narrow in places and would benefit from repairs.</p> <p>The Applicant therefore commissioned a road condition survey, which identified that some localised widening would be advisable for HGVs passing without verge over-run, and there are also some potholes that could be repaired. Localised repairs and widening will therefore be undertaken.</p> <p>In addition, improvement of the alignment of the bend on Whitefield Lane to the west of Whitley will be undertaken and advance warning signage will be erected on both sides of Cobcroft Lane approximately 150 m prior to the entrance to the Gale Common Ash Disposal Site to warn drivers of the potential for slow turning vehicles.</p> <p>Annual road condition surveys of Cobcroft Lane/ Whitefield Lane between the Gale Common Ash Disposal Site entrance and the A19 will be undertaken during the operation of the Proposed Development.</p> <p>The indicative locations of the road improvements are shown in Figure 4.1 (ES Volume III). The provision of the works, including detailed design, is secured by the draft Section 106 agreement.</p>	<p>Provided within six months of operations commencing or as soon as practicable</p>

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
Category 2 – Further Mitigation Above 400,000 Tonnes per Annum Export		
Re-alignment of eastern end of Whitefield Lane near Whitley, and improvements to A19 at junction	<p>The realignment (to the south of its existing alignment) of approximately 400 m of the eastern end of Whitefield Lane in the vicinity of the junction with the A19, and minor works to the A19 to improve access into Whitefield Lane. This is to position the road further away from residential properties on Whitefield Lane in order to mitigate potential amenity and noise impacts from vehicles, and to improve safety at the A19 junction. The measure is to be secured by Section 106 agreement.</p> <p>The indicative location and form of the works are shown in Figure 4.3 (ES Volume III). The provision of the works, including detailed design, is secured by the draft Section 106 agreement.</p>	Triggered once confirmed, contracted export tonnages exceed 400,000 tpa and to be carried out within a period to be agreed with NYCC.
Category 3 – Site Improvement and Re-configuration Works		
Public access to Stage I	<p>The Applicant will provide public access to the restored Stage I area for recreational use on Saturday afternoons, Sunday mornings and afternoons, and on week days by appointment. It is envisaged that in the first instance (in 2020) this will include pathways, fencing and signage, and in the longer term may also include a new access road from Cobcroft Lane, car parking, security and welfare facilities, and information boards.</p> <p>This is a significant and early benefit, noting that no public access is secured under the terms of the current scheme.</p> <p>The indicative arrangement is shown in Figures 4.4a and 4.4b (ES Volume III). The submission of detailed public access proposals, and the agreement and construction of them, is secured by the draft Section 106 agreement.</p>	Provided within one year of operations commencing or another timescale agreed with NYCC.
Up to 4x additional weighbridges (to make up to 5 total)	Additional weighbridges may be installed within the Gale Common Ash Disposal Site (prior to the implementation of new site access arrangements as described below) to	This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
	<p>improve efficiency of HGV movements into and out of the Gale Common Ash Disposal Site.</p> <p>These would most likely be located in the vicinity of the Gale Common Ash Disposal Site entrance.</p> <p>The indicative locations are shown in Figures 4.2 and 4.5 (ES Volume III).</p>	<p>therefore only be provided following a commercial decision by EPUKI.</p>
<p>New site access arrangement with driver welfare and visitor parking</p>	<p>An improved access arrangement, implemented to improve site circulation, along with improved facilities for drivers. This will include the widening and improvement of the existing access arrangements at Cobcroft Lane, with a new security gatehouse, driver welfare facilities and visitor parking.</p> <p>The indicative layout of the new arrangement is shown in Figure 4.5 (ES Volume III).</p>	<p>This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.</p>
<p>Internal site road widening</p>	<p>To improve efficiency within the Gale Common Ash Disposal Site. A new and upgraded internal access road between the Gale Common Ash Disposal Site entrance and the loading pad to improve the circulation of HGV traffic within the Gale Common Ash Disposal Site.</p> <p>The indicative layout of the new arrangement is shown in Figure 4.2 (ES Volume III).</p>	<p>This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.</p>
<p>New reinforced crossing of the Yorkshire Water aqueduct that crosses the Gale Common Ash Disposal Site from south-west of the loading pad to the north-east of the surface water pumping station.</p>	<p>To enable a separate route for plant movements between Lagoons C and D and the loading pad. Consultation with Yorkshire Water is ongoing to establish the design requirements to ensure there is no impact on Yorkshire Water assets.</p> <p>The indicative location of the reinforced crossing is shown on Figure 4.2 (ES Volume III).</p>	<p>This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.</p>
<p>Extended HGV loading pad</p>	<p>An extended concrete loading pad, with associated HGV access loop and loading area, lighting, and appropriate drainage (requiring removal of a redundant conveyor) to improve efficiency within the Gale Common Ash Disposal Site.</p>	<p>This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial</p>

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
	<p>The extended loading pad will incorporate drainage to control surface water runoff. It is recommended that the submission of a detailed scheme is secured by a condition attached to any planning permission.</p> <p>The indicative layout of the new arrangement is shown in Figure 4.6 (ES Volume III).</p>	decision by EPUKI.
New/ extended site offices	<p>The new/ extended offices will be provided if it is deemed necessary when/ if staff numbers increase to service the increased tonnages exported from the Gale Common Ash Disposal Site.</p> <p>The location is shown in Figure 4.2 (ES Volume III).</p>	This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.
Second wheel wash	<p>A second wheel wash may be installed to improve operational efficiency.</p> <p>The indicative location of the second wheel wash is shown on Figure 4.2 (ES Volume III), adjacent to the existing wheel wash.</p>	This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.
Additional plant and equipment	<p>Additional plant and equipment for the excavation, preparation and loading of material for export off site (loading shovels, mobile and/ or fixed crushers and screeners, mobile lighting stations, dump trucks, water bowsers/ dust suppression units, a hopper and a stacker conveyor).</p> <p>The stacker conveyor (see location on Figure 4.6 in ES Volume III) would enable separation of HGVs (clean) and plant (dirty) at the loading pad, meaning fewer vehicles would need to pass through the wheel wash facility.</p>	This is not an essential management or mitigation measure, rather it would be required as tonnages increase and/ or to improve operational efficiency. Additional plant and equipment would therefore only be provided following a commercial decision by EPUKI.
New diesel storage tank and mobile refuelling tanker	<p>A new diesel storage tank and mobile refuelling tanker for fuelling plant on site.</p> <p>The indicative location of the new diesel storage tank is shown in Figure 4.2 (ES Volume III).</p>	This is not an essential management or mitigation measure, rather it would improve operational efficiency. It would therefore only be provided following a commercial decision by EPUKI.
Review viability of alternative sustainable	An initial feasibility study has identified that the Gale Common Ash	This commitment will apply to the duration of

MEASURE	DESCRIPTION AND COMMENTS	TRIGGER
modes of transporting PFA off site, including by water and rail	<p>Disposal Site is located in the vicinity of existing navigable waterways and railway infrastructure which have potential for use in the transport of PFA. See the Sustainable Transport Feasibility Study that accompanies the planning application.</p> <p>It is proposed that the requirement for a review regime relating to the use of sustainable modes of PFA transport will be secured by an appropriate planning condition.</p>	operations.

4.5.3 In addition to the measures set out above the Applicant will establish a Gale Common Community Liaison Group, inviting North Yorkshire County Council, Selby District Council, local Parish Councils and the Environment Agency to meet quarterly to discuss the ongoing operation of the Gale Common Ash Disposal Site.

4.5.4 The Applicant will also display a contact number at the Gale Common Ash Disposal Site entrance on Cobcroft Lane for the general public to contact in the event of any issues arising regarding the operation of the Gale Common Ash Disposal Site.

4.6 Construction

4.6.1 A description of the construction stage is provided below. Where relevant, construction impacts have been considered within the technical chapters of this ES (Volume I, Chapters 6 – 11).

4.6.2 The construction aspects of the Proposed Development are limited, primarily because much of the necessary infrastructure already exists at the Gale Common Ash Disposal Site. Standard good practice methods will be employed during the construction stage and the development will not result in the production of any significant waste, pollution or nuisance, or increase the risk of accidents or hazardous effects.

Construction Timescale and Durations

4.6.3 It is anticipated that construction activities required in the short term to enable export of PFA to increase (namely localised widening and repairs to Cobcroft Lane/ Whitefield Lane and Whitefield Lane bend improvements – see Figure 4.1 in ES Volume III) will commence in autumn 2019 (or as soon as the necessary details are approved by NYCC), lasting for approximately two months, with the Proposed Development entering operation in late 2019/ early 2020.

4.6.4 Construction of the remaining aspects of the Proposed Development will commence on a phased and as required basis, as set out in Table 4.1 and summarised below. Some of the measures listed below are to improve the operational efficiency of the Gale Common Ash Disposal Site as the export tonnage gradually increases:

- works to improve the eastern end of Whitefield Lane comprising road realignment and right turn lane improvements on the A19 (see Figure 4.3 in ES Volume III) –to be triggered when contracts for export of material exceed 400,000 tonnes per annum (i.e. dependant on commercial contracts being confirmed) and carried out within a period to be agreed with NYCC, with construction expected to take approximately six months;
- new site access arrangements including widening of the Gale Common Ash Disposal Site entrance, construction of a new section of internal road and a gatehouse and installation of new barriers, weighbridges, drainage, etc. – approximately four months construction;
- installation of additional plant and equipment including weighbridges and wheel washes – construction of suitable base structures for installation of plant, equipment and machinery;

- internal site road widening comprising repairs and upgrading of the existing internal access road including localised widening – approximately two months construction,;
- extension of the HGV loading pad including enlargement of the existing concrete loading pad, construction of an HGV route around the pad for access and loading, and installation of lighting columns – approximately three months construction;
- extended/ new offices, in the form of modular units – approximately one month construction and internal fit-out;
- facilities for public access to Stage I, initially comprising the construction of new pathways, fencing, gates and signage (accessed via the existing Gale Common Ash Disposal Site entrance) - approximately three months construction, commencing early 2020. In the longer term this may also include construction of a new visitor site entrance from Cobcroft Lane, car parking, security and welfare facilities – approximately three months construction, which will be undertaken to meet demand; and
- new diesel storage tank to be installed on site – one month construction.

Construction Activities

- 4.6.5 The small volumes of construction traffic will vary throughout the construction programme depending on the requirements of each construction phase.
- 4.6.6 It is proposed that further detail relating to the construction is included in a Construction Environmental Management Plan (CEMP), to be prepared by the contractor(s) employed to construct each aspect of the Proposed Development and secured by a condition attached to any grant of planning permission.
- 4.6.7 Construction activities would be confined to the hours of 08:00 to 18:00 on weekdays and 08:00 to 13:00 on Saturdays, with no working on Sundays or Bank Holidays. In some circumstances (for example concrete pouring), it may be necessary to work outside of these hours and, in these circumstances, permission would be sought from NYCC. It is suggested that this mechanism is secured by a condition attached to any grant of planning permission.
- 4.6.8 Construction laydown areas for materials and the construction site compound(s) will be located within the Site.
- 4.6.9 The anticipated activities associated with each aspect of construction are summarised below:
- localised repairs and widening along Cobcroft Lane and Whitefield Lane, and bend improvements on Whitefield Lane will involve the delivery of stone, compaction via rollers, and laying of blacktop as well as localised vegetation removal/ management to improve driver visibility on the bend west of Whitley village;
 - works to improve the eastern end of Whitefield Lane comprising road realignment and right turn lane improvements on the A19 will involve establishment of a small contractor's compound, ground clearance using bulldozers and tippers, road construction (including stone delivery, compaction using rollers, and laying of blacktop), installation of fencing and bollards, seeding of grass verges, road lining and installation of new signage;
 - creation of new Gale Common Ash Disposal Site access arrangements including widening of the site entrance, construction of a new section of internal road and a gatehouse and installation of new barriers, weighbridges, drainage, etc. will involve ground clearance using bulldozers and tippers, road construction (including stone delivery, compaction using rollers, and laying of blacktop), installation of fencing and barriers, construction of the gatehouse and driver welfare structures, delivery and installation of jet wash, seeding of grass verges, road lining and installation of signage;
 - provision of additional plant and equipment including weighbridges and wheel washes will involve construction of appropriate base structures, and delivery and installation using power tools;

- internal site road widening comprising repairs and upgrading of the existing internal access road including localised widening will involve ground clearance using bulldozers and tippers, road construction (including stone delivery, compaction using rollers, and laying of blacktop), installation of fencing and signage, seeding of grass verges, and road lining;
- extension of the HGV loading pad will involve ground clearance using bulldozers and tippers, ground reinforcement (if required), road construction (including stone delivery, compaction using rollers, and laying of blacktop), delivery and pouring of concrete, and installation of drainage and lighting;
- provision of extended/ new offices will involve site preparation using bulldozers and tippers, laying of foundations, delivery and installation of modular units and internal fit-out;
- creation of facilities for public access to Stage I will initially involve construction of new pathways, and installation of fencing, gates and signage, but may later involve ground clearance using bulldozers and tippers, road and car park construction, installation of additional fencing and barriers, construction of a security and welfare building, installation of lighting, re-seeding of grass verges, and road lining; and
- installation of a new diesel storage tank will involve delivery and installation of the tank.

4.6.10 The construction works associated with the Proposed Development are anticipated to generate relatively small numbers of HGV movements, with the maximum estimated at around 50 two-way HGVs per average day for one week during concrete pouring required for extension of the HGV loading pad within the Gale Common Ash Disposal Site. At other times during the construction phase, there is anticipated to be no more than around 10 two-way HGV movements per average day.

4.7 Restoration

4.7.1 Restoration of each part of the Gale Common Ash Disposal Site will be undertaken as soon as practicable.

4.7.2 It is anticipated that the restored Stage I area will be opened to the public for recreational use in 2020, following completion of works to provide pathways, fencing, gates and signage. The new access from Cobcroft Lane, parking, security and welfare facilities would be provided at a later date based on demand.

4.7.3 Following the completion of extraction from Stage III (after approximately two to three years of operation), part of the Stage III area will be restored to grassland with seasonal ponds (see Appendix 6C: Indicative Landscape and Biodiversity Restoration Strategy in ES Volume II). The remainder of Stage III will remain in operational use, providing the route for Stage II material to be transported to the loading pad and areas for soil stockpiling and PFA screening, crushing and stockpiling.

4.7.4 As extraction from Stage II progresses below around 34 mAOD, it is anticipated that colliery shale (which was used in the construction of Stage II) will be encountered, which will be excavated and used to achieve the final landform around the southern and eastern flanks of the retained Stage I. This will be progressively covered in soil and seeded/ planted as the earthworks are completed.

4.7.5 Restoration of the remainder of the Stage III area (with the exception of the western end where screening and crushing equipment is expected to be located) and the entire Stage II area will progress after Stage II extraction has been completed, whilst extraction operations are taking place at Lagoons C and D.

4.7.6 Restoration of the Lagoons C and D area will be undertaken when extraction has been completed in this area (at the end of the operational period).

4.7.7 An Indicative Landscape and Biodiversity Restoration Strategy is provided in Appendix 6C (ES Volume II). Chapter 6: Landscape and Visual Amenity considers the impacts and effects on

landscape and visual amenity following the completion of restoration and photomontages from key viewpoints are provided in ES Volume III.

- 4.7.8 It is proposed that a planning obligation will secure submission of detailed restoration plans (relating to the above interim and final restoration phasing), based on the Indicative Strategy, as set out in the draft Section 106 Agreement that accompanies the planning application. This will secure and determine the final, detailed restoration scheme.

4.8 Consideration of Alternatives

- 4.8.1 Reasonable alternatives to the Proposed Development that have been considered are:

- 'Do Nothing';
- a similar development at an alternative location; and
- an alternative development at the Gale Common Ash Disposal Site.

Do Nothing Alternative

- 4.8.2 If the Proposed Development was not progressed (the 'Do Nothing' scenario), the Gale Common Ash Disposal Site would be restored as required by the existing planning consents and Environmental Permit (subject to amendments to reflect the current land profile) to grassland/ arable use with tree planting, with ongoing management and monitoring.

- 4.8.3 The opportunity to extract PFA for beneficial use as a secondary aggregate would not be realised and the construction industry would either have to source PFA from other sites or imports, or continue to use primary aggregates.

- 4.8.4 Compared to the Proposed Development and alternative development at the Gale Common Ash Disposal Site scenarios, the Do Nothing alternative would be unlikely to have any significant adverse effects on receptors local to the Gale Common Ash Disposal Site (such as road traffic and visual impacts), but the Proposed Development offers potentially significant total carbon savings over the 25 year operational phase of extraction at Gale Common, which would not be delivered by the Do Nothing alternative. Savings are estimated to be in the order of 11 million tCO₂e depending on the future use of the PFA (see the Sustainability and Carbon Review that accompanies the planning application). Significant sustainability benefits can therefore be achieved by using PFA in the construction industry.

Alternative Locations

- 4.8.5 The opportunities for a similar development at an alternative location are limited by the availability of PFA deposits. PFA is produced during combustion at solid fuel-fired power stations and is regulated as a waste which, if not recovered, is disposed of to landfill. It is potentially recoverable from landfill when it has been the only waste deposited in a location, such as is the case at Gale Common.

- 4.8.6 It has been estimated by the UK Quality Ash Association (UKQAA) that there could be up to 100 million tonnes of PFA from coal-fired power stations that has previously been deposited. This may not all be accessible or suitable. The Applicant only has control over two such sites in the UK – the Gale Common Ash Disposal Site and a site in the north east of England. However, the quality of ash available at that alternative site does not meet the same specification and therefore cannot be utilised for the same markets as the ash from Gale Common.

- 4.8.7 The demand for PFA in the UK is currently exceeded by supply from UK sources and it is estimated by the UKQAA that 254,000 tonnes of PFA was imported primarily via ship into the UK in 2018 (approximately five times more than the amount of PFA imported in 2014). Other PFA to date has been sourced directly from operational coal-fired power station but these are increasingly closing or reducing running hours, so that the same volumes will not be available into the future. It is therefore apparent to the Applicant that there is sufficient UK demand for PFA to justify the proposed extraction operations from the Gale Common Ash Disposal Site as well as continued extraction undertaken by others at alternative UK sites.

4.8.8 There is a regional demand for PFA to supply block manufacturers that can be supplied from the Proposed Development reducing the transport emissions and associated carbon impacts associated with transporting material from further afield. Therefore, whilst alternative sites are available, they should be considered alongside the Proposed Development.

4.8.9 The environmental effects of ash extraction from alternative sites may be similar to those predicted for the Proposed Development (e.g. traffic and visual impacts), but the effects would be experienced by different communities local to the alternative sites.

Alternative Development at the Gale Common Ash Disposal Site

4.8.10 Planning policy indicates that the secondary aggregates deposited at the Gale Common Ash Disposal Site should be safeguarded as a mineral resource where possible. Also the Gale Common Ash Disposal Site is located within the Green Belt, so any other type of development on the Gale Common Ash Disposal Site would need to demonstrate a clear need and benefit. At this stage no such development has been identified.

4.8.11 As the majority of the facilities required for the Proposed Development are already in place and in use (site entrance, internal access roads, wheel wash, HGV loading pad, offices, etc.) no substantially different alternative layouts within the Gale Common Ash Disposal Site have been considered. However, as outlined below, the design of the Proposed Development has undergone evolution as the EIA has progressed, in order to reduce or mitigate potential environmental effects. The environmental effects of alternative developments at the Gale Common Ash Disposal Site cannot be estimated until the nature of any such alternative development is identified.

4.8.12

4.9 Proposed Development Design Evolution

4.9.1 As described throughout this chapter, the Proposed Development will primarily use existing facilities which define the layout of the Gale Common Ash Disposal Site. However the initial EIA findings and feedback from consultation with statutory stakeholders and local people have influenced the design and scope of new facilities and additional control measures as summarised in Table 4.2 below.

Table 4.2 – Design Evolution

PROPOSED DEVELOPMENT ELEMENT	SUMMARY OF DESIGN EVOLUTION
Export of material from Gale Common Ash Disposal Site	<p>Consultation with NYCC and local residents identified road traffic impacts on local residential areas including Cridling Stubbs and Whitley to be a significant concern.</p> <p>The Applicant has considered a number of ways in which traffic impacts on local residents could be mitigated including:</p> <ul style="list-style-type: none"> • splitting the HGV traffic across numerous routes to reduce impacts on any one settlement; • constructing additional site entrances to reduce impacts on any one settlement; • use of canal and/ or rail transport; • reslurrying PFA to export by pipeline; • changes to the existing road network including a new junction linking the Gale Common Ash Disposal Site directly to the M62 or realignment of the existing route to the M62 Junction 34. <p>Splitting traffic across several routes was considered to be impractical to implement and would unnecessarily increase the HGV travel distance to the motorway network (with associated air and carbon emissions). On balance,</p>

PROPOSED DEVELOPMENT ELEMENT	SUMMARY OF DESIGN EVOLUTION
	<p>it is considered preferable for traffic to take the most direct route to the strategic road network (M62 Junction 34) via Cobcroft Lane, Whitefield Lane and the A19.</p> <p>No suitable locations for additional site entrances to the east, south or west were identified, and the traffic would still have to travel along the same local roads to reach the M62, so there would be no benefit.</p> <p>Use of canal and/ or rail transport has been considered in a Sustainable Transport Feasibility Study which accompanies the planning application, and the Applicant is committed to reviewing the feasibility of using sustainable transport modes during the operation of the Proposed Development. However at present as no suitable infrastructure exists and the locations of customers is not known, it is assumed for the purposes of the planning application that all export will be by road.</p> <p>Transporting the PFA from the Gale Common Ash Disposal Site back to Eggborough Power Station via the existing pipeline route in slurry form has been considered but rejected due to the significant water demand associated with re-slurrying the PFA (and the lack of an available water supply to meet this demand) and the space/ energy that would be required for dewatering it again.</p> <p>Highways England would not allow a new motorway junction to be constructed for a single development, rather a strategic case would be required to support this. A new junction north of the Gale Common Ash Disposal Site may also not be acceptable given the proximity to the existing Junction 34 (c. 2 km).</p> <p>The Proposed Development therefore includes a designated HGV route to the M62 Junction 34 via Cobcroft Lane, Whitefield Lane and the A19, and a proposed realignment of the eastern end of Whitefield Lane (described further below).</p>
Whitefield Lane realignment	<p>Consultation with NYCC and local residents identified traffic impacts on local residential areas to be a significant concern. Initial noise assessment work also identified the potential for significant traffic noise effects on some of the residential properties on Whitefield Lane, and the initial traffic assessment identified the potential for significant effects on pedestrian amenity.</p> <p>The Applicant has responded to this by entering into an agreement with a local landowner to purchase land south of Whitefield Lane at the junction with the A19 to enable Whitefield Lane to be realigned, moving the road further away from these residential properties. The trigger for this realignment work being instigated has been informed by quantitative noise calculations, which concluded that noise effects are not significant below 400,000 tpa export but could be significant beyond this point.</p> <p>The outline design (see Figure 4.3 in ES Volume III) includes a close-boarded wooden fence and hedgerow between the residential properties and realigned road to provide further visual and noise screening and improve pedestrian amenity.</p>

PROPOSED DEVELOPMENT ELEMENT	SUMMARY OF DESIGN EVOLUTION
Condition of public highway route to M62	<p>The initial transport assessment and road condition survey identified localised sections of Cobcroft Lane and Whitefield Lane that are narrow which results in some verge over-running. Given the additional traffic that the Proposed Development will add to this section of road the Applicant has committed to making localised repairs and widening, including improvements at the bend west of Whitley village, to improve the condition and safety of the existing road.</p>
HGV cleanliness	<p>Local residents identified concerns about potential for HGVs to deposit dirt and debris on local roads, following a bad experience with another local operation in recent years.</p> <p>The layout of the Gale Common Ash Disposal Site is such that the HGVs (which are sheeted after loading) travel around 350 m from the HGV loading pad, via a wheel wash facility, on internal site roads before reaching the public highway. This ensures that HGV wheels are not dirty when they reach Cobcroft Lane and based on many years of operations at the Gale Common Ash Disposal Site no additional controls are envisaged to be required. However, to provide additional reassurance to the local community, further control measures have been included in the Operational Traffic Management Plan (see Annex P in Appendix 8A, ES Volume II), including visual inspection of all vehicles and the availability of a jet wash.</p>
HGV loading	<p>The existing loading pad is located well away from sensitive receptors and is not visible from outside the Gale Common Ash Disposal Site. It is also conveniently located between all three ash extraction areas. The existing location is therefore to be retained, but extension of the pad may be required for operational efficiency reasons as the rate of PFA export ramps up towards 1 million tpa.</p> <p>The design of the extended loading pad has considered site constraints whilst also delivering a sufficient PFA stockpiling area, efficient and safe loading plant movement area, and segregated HGV route avoiding the need for HGV reversing.</p>
Operation of plant within Gale Common Ash Disposal Site	<p>The initial noise assessment identified potential for significant adverse effects on nearby sensitive receptors where excavation plant may be operating in close proximity during some parts of the extraction phase. The extraction method has therefore been designed to include a c. 5 m bund around working areas where there is potential for significant noise effects. This will also help visually screen activities from view outside the Gale Common Ash Disposal Site.</p> <p>The Applicant has also committed to using plant with white noise reversing alarms rather than beeping alarms to further mitigate potential noise effects.</p>
Restoration and public access	<p>At present there is no public access to the Gale Common Ash Disposal Site. During public consultation, local residents expressed an interest in visiting the Gale Common Ash Disposal Site and having public access to the restored Stage I area.</p>

PROPOSED DEVELOPMENT ELEMENT	SUMMARY OF DESIGN EVOLUTION
	<p>In response to these comments the Applicant has conducted site tours for local residents during the pre-application stage and has committed to granting public access to Stage I from 2020.</p> <p>An Indicative Landscape and Biodiversity Restoration Plan has been prepared to outline the long term proposals for restoration of the Gale Common Ash Disposal Site for landscape, biodiversity and community benefit.</p>

4.10 References

Defra (2009a) *Soil Strategy for England*.

Defra (2009b) *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*.

Environment Agency (2016) *Business and environment report: Environmental outlook for the combustion sector*.