

APPENDIX 2

Project Vulnerability to Climate Changes and Assessment of Greenhouse Gases Statement.

**TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT)
REGULATIONS 2017 ('THE EIA REGULATIONS')**

PROPOSED BOURBLES QUARRY on Land off Bourbles Lane, Lancashire

PLANNING APPEAL REF: 6002168

1. INTRODUCTION

1.1 Greenfield Environmental Ltd prepared an Environmental Statement (ES) as part of the requirements for an Environmental Impact Assessment (EIA) for the proposed minerals development on the "Bourbles" site. This ES (dated July 2023) was presented in support of a minerals planning application for "the extraction and processing of sand and gravel including the construction of new site access roads, landscaping and screening bunds, minerals washing plant and other associated infrastructure with restoration to leisure end-uses, agricultural land and biodiversity enhancement, using imported inert fill".

1.2 As part of the Regulation 25 request for more information made for the purposes of the Planning Inquiry on Land off Bourbles Lane, Lancashire the Planning Inspectorate (PINS) have made the following request:

The appellant is requested to provide either a statement evidencing why an assessment of greenhouse gases and vulnerability to climate change is not required with reference to relevant assessment criteria and/ or thresholds OR a description of the likely significant effects of the proposed development on the environment resulting from the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change.

The reason for the request is stated as "ES as submitted does not include reference to, or an assessment of, this impact pathway as required by Schedule 4 (4) and Schedule 4 (5f) of the EIA Regulations, or an explanation provided as to why an assessment was not required".

1.3 A letter was issued to PINS (dated explaining the reasons for the exclusion of Greenhouse Gases and Climate Change" as these issues were "scoped out" during the Scoping Request received from Lancashire County Council (LCC).

1.4 This statement addresses the information requested by PINS to ensure compliance with the requirements of the Environmental Impact Assessment (EIA) Regulations associated with the proposed minerals development scheme.

2. CLIMATE CHANGE BACKGROUND

2.1 The National Planning Policy Framework (December 2024) (NPPF) at paragraph 164, in part, requires that 'new development should be planned for in ways that:

a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and

b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards'.

2.2 The Climate Change Committee ("CCC") in their 'Independent Assessment of UK Climate – Advice to Government CCRA3' report published in June 2021, emphasise that the global impacts of climate change are increasing with a rapidly heating climate, even with ambitious targets for the reduction of global greenhouse gas emissions. CCC specifically state that UK sea levels have risen 16cm since 1900, with heat waves becoming much more frequent and an increase in the average annual temperature in the UK of 0.5 degrees Celsius projected by 2050, increasing the UK's exposure to weather related hazards, including:

- Increases in average and extreme temperatures, in winter and summer;
- Changes in rainfall patterns, leading to flooding and water scarcity;
- Increased coastal flooding and erosion, alongside increasing sea temperatures and ocean acidification;
- Increased frequency and intensity of wildlife loss; and
- Potential changes to other weather variables such as wind strength, direction, sunshine and UV levels, cloudiness and sea conditions.

2.3 Similar headline information is presented within the UK Climate Change Projections (UKCP18) published by the Met Office in conjunction with the Department for Environment, Food and Rural Affairs (DEFRA), the Department for Business, Energy & Industrial Strategy and the Environment Agency.

2.4 These various documents identify three main elements to climate change adaptation, including :

- building resilience to climate change through the way land is used and managed;
- accommodating change in the context of site management and habitat connectivity; and
- ecosystem-based adaptation, including reducing flood risk through the creation of wetland

- 2.5** DEFRA's 'Natural Adaptation Programme and the Third Strategy for Climate Adaptation Reporting' published in July 2018 confirms that DEFRA will target interventions across urban and rural areas so that they restore, expand and link with existing ecosystems and wildlife habitats to address the risks of climate change in terms of building resilience through connected wildlife-rich habitat. In the context of 'infrastructure', including access to the strategic road network, and 'business and industry', the focus is on building resilience to extreme weather and future risks and opportunities from climate change, particularly in terms of flooding to reduce loss in productivity and supply chain issues.
- 2.6** Natural England, in the Nature Networks Evidence Handbook (NERRO81) published in March 2020, place emphasis on the creation of nature networks and highlight that it is important to consider constraints and opportunities provided by the landscape, geology and ecosystems within the respective landscape in the context of building resilience and helping society adapt to climate change. Whilst the majority of the application site is in active agricultural use and therefore the destruction and degradation of natural habitats in the context of release of carbon is of reduced relevance, the emphasis on the restoration and establishment of habitats of nature conservation value, has been a critical consideration in the development of the restoration scheme, appropriately balanced with agriculture.
- 2.7** Given the emphasis on ecosystems, nature conservation and biodiversity and factoring in site and development constraints such as the generally short timescale of the proposed mineral operations, the lack of protected species and priority habitat, but including restoration proposals utilising a range of on-site and imported resources as well as extensive agricultural land use (and the fact that minerals can only be worked where they occur), it is considered that the main opportunities in terms of climate change adaptation, relate to the restoration proposals for the proposed Bourbles Quarry development.

3. BAXTER GROUP ENVIRONMENTAL OBJECTIVES & POLICIES

- 3.1** Baxter Group have a published Environmental Policy that is operational through all aspects of the family business that focuses on preserving and enhancing the current environmental position, reducing environmental damage caused by the use of resources, the reduction of waste and working collaboratively with employees to positively impact on environmental issues.
- 3.2** The policy is underpinned by Auditing and Environmental Risk Assessments that form the basis of future action planning and resource allocation, with the performance monitored on an annual basis and Risk Assessments kept under continuous review
- 3.3** The annual review of the Policy will allow Baxter Group to the continuous evolution of environmental and climate change adaptation and associated technologies within the business.

- 3.4** In terms of other development aspects, with the government's commitment to ensuring that in the UK from 2035, no diesel or petrol fuelled cars and vans are manufactured or sold and an increase in electric vehicles, electric vehicle charging points will be provided at the application site within the proposed parking areas at the north of the application site, for use by staff and visitors. These again will be incorporated into the restoration concept for the leisure restoration concept.

4. PROPOSED WORKING & RESTORATION SCHEME

- 4.1** The proposed mineral development is based on a sequential and phased system of working, which, in the context of greenhouse gas emissions, means that the intensity of operations is limited to specific areas and balanced over the shortest possible timeframe.
- 4.2** The plant site itself is proposed to be located in the central part of the application site within proximity of the Lancaster Road with immediate HGV access from the public access, thereby minimising the HGV travel (and other vehicles) distances within the application site. The access road will also be installed with a view to future use in the long-term restoration objectives of the site as a small-scale leisure facility.
- 4.3** Whilst in the short term, greenhouse gas emission savings compared with other areas of the application site that had been considered for location of the plant site, will be limited over the course of the proposed development, the benefits of the shortest access to the public highway are considered to be more significant.
- 4.4** It is proposed that the processing plant would be electrically powered following a connection to the local grid. This would therefore significantly reduce fossil fuel usage associated with the plant operation compared with the use of diesel-powered generators. Given the energy intensive nature of mineral processing, in accordance with Baxter Groups policies, the processing plant and corresponding components will be as highly efficient as possible. This will be based on the options available during the selection and commissioning process, in terms of energy consumption, water consumption and other aspects, balanced with minerals output and cost
- 4.5** The proposed working scheme of campaign excavation to haul sand and gravel from each phase area to the plant maximising the use of the plant employed over short periods of time (around 6-8 weeks per campaign), with proposals to backhaul restoration materials from the plant area, will also significantly reduce fossil fuel usage as the dump trucks will always be traveling with a load, rather than an empty return journey.

- 4.6** As part of the Baxter Groups environmental policy, all plant and machinery (including contractor plant) including weighbridge and water bowers used on site, excavators and dump trucks will be regularly maintained to ensure the efficient operation of application site. Increased plant automation and optimisation will also be considered for use on site as technologies evolve throughout the proposed development.
- 4.7** Climate change, including in the context of flood risk, has also been a consideration of the proposed surface water and groundwater management as set out in the EIA and planning statement. All groundwater and surface water abstracted and harvested from within the application site will be recirculated via the proposed lagoons network, for re-use within the mineral processing plant with minimal discharge from site in adjacent surface water ditches. It is proposed that any excess water will mainly be discharge into the existing ponds on the site to allow the water to soakaway into the groundwater environment.

5. ROAD HAULAGE & AGGREGATE MARKETS

- 5.1** Options are limited at the present for the use of non-fossil fuel powered HGV transport associated with the quarrying industry. On that basis road haulage of aggregates is required using the most efficient road freight technologies available. Low carbon transport options that are possible in connection with the proposed development will be considered as the development progresses. Other options may include carbon capture, switching large mobile plant to hydrogen and the provision of an all-electric car, van and delivery fleet.
- 5.2** Due to the limited project timescales (5-years for mineral extraction) it is considered that many carbon reduction options will not be commercially available in the short-term.
- 5.3** It should be noted however, that the most significant carbon reduction options associated with the proposed Bourbles Quarry development are considered to be the large reduction in fossil fuel usage associated with the delivery of aggregate products to the local construction markets. It has been confirmed that at the present time there is no available supply of concreting sand and gravel available within the County of Lancashire. All major consumers of sand and gravel within the County (including Tarmac, Holcim and Breedon) all import sand and gravel from quarries located the County of Cheshire.
- 5.4** The majority of the quarries supplying Lancashire are generally located in the Crewe and Winsford area that is about 110km south of Wyre district area. Assuming the Bourbles quarry becomes operational at the assumed output of 100,000 tonnes per annum, that equates to some 5,000 HGV annual movements. With aggregate markets located within 25km of the proposed quarry site this would equate to a reduction of 85km on each loaded HGV sourced from Cheshire.

- 5.5** Based on UK government and industry standards (Google search), a 20-tonne rigid tipper truck typically produces around 0.9 kg of CO₂ per km when loaded. It should be noted that this will vary by fuel efficiency, load factor, and driving conditions. The inferred reduction of travel distances by 85km will therefore have an assumed net CO₂ reduction of 76.5kg per journey. For the 5,000 HGV's delivering aggregates per annum this could equate to an annual CO₂ reduction of 385,500 kg (385.5 tonnes per annum).
- 5.6** For the proposed Bourbles minerals development over 5-years, a total CO₂ reduction of some 1,912 tonnes may be achieved by not transporting aggregates from Cheshire to Lancashire, but utilising aggregates sourced from Bourbles Quarry.

6. RESTORATION & CLIMATE CHANGE RESILIENCE

- 6.1** Nature is commonly cited as being an important component of tackling climate change in a number of the guidance documents in terms of carbon sequestration, greenhouse gas emissions reductions, flood risk reduction and ecologically connected landscapes. This nature concept, in conjunction with existing and evolving planning policy on biodiversity net gain, has influenced the design of the restoration proposals by utilisation of land assets to deploy nature-based solutions to reduce long-term greenhouse gas emissions. At the same time the restoration proposals provide a sustainable option for both the landowners, the local environment and the local economy.
- 6.2** The proposals for the restoration and after-use of the site on completion of the quarrying works have been used as an opportunity to incorporate features that adapt to climate change including increased flood water storage provision and alleviation measures with additional ponds and water courses, enhanced biodiversity and habitat creation, and the provision of natural landscape features including ponds with aquatic marginal land, wet woodland, species rich grassland and hedgerow planting
- 6.3** The proposed restoration comprises a combination of agriculture, leisure activity and nature conservation and includes provision of the following after-uses/habitats:
- Arable / pasture land
 - Neutral grassland & wildflower meadow
 - Wet grassland
 - Wetland scrapes & ponds
 - Amenity grassland
 - Woodland
 - Leisure Lodges
- 6.4** As well as provision of a diverse range of habitats, habitats of local importance have been considered as part of the restoration scheme to increase robustness to climate change, whilst benefitting biodiversity.

- 6.5** In this regard, the main aspects of connectivity, include reinstatement or replacement of all hedgerows to restore existing connectivity, with supplementary woodland planting completed where required. The establishment of ponds and areas of open water at various points across the application site would diversify the range of habitat that is available on the site.
- 6.6** All of these habitats have the potential contribute when considering carbon capture and sequestration consistent with national policy and guidance. In terms of building resilience to climate change, habitat management is especially relevant, particularly where the nature of habitat impacts has been assessed. The Biodiversity Net Gain (BNG) net change for the proposed restoration scheme has been calculated at over 20% compared with the existing habitats, which is considered a very significant increase compared with the current site conditions.
- 6.7** The resultant new and enhanced scope of biodiversity and habitats included within the restoration proposals is intended to mitigate any residual visual, landscape and agricultural land impacts on completion of the development. However, the proposals also provide carbon sinks and better-connected ecological networks, and therefore it is considered delivers a positive benefit in terms of climate change mitigations and adaptations compared to the existing site.

7. CONCLUSIONS

- 7.1** During its operational phase, the proposed development is assessed as having a neutral to minor beneficial impact on emissions related to climate change due to the substantial reduction in CO₂ emissions related with the current long-distance haulage of aggregates from Cheshire to Lancashire.
- 7.2** On completion of the development and the completion of site restoration, climate change-related emission impacts from the development site will reduce with only the impacts created by the development of the lodges within the central part of the site. However, for the vast majority of the site area there will be no residual emission effects, but there will be increased biodiversity and positive nature impacts (as noted in the 20% increase in BNG) that will provide a net positive impact.
- 7.3** It is therefore considered that the overall long-term residual climate change impacts of the proposed development are therefore considered to be minor beneficial.

Prepared By:



S J Rees B.Sc., M.Sc., C.Geol, FGS, MIQ
for Greenfield Environmental