Non-Technical Summary

Section 73 Planning Application for proposed deepening of the existing quarry and an extension of time for mineral extraction and restoration operations through the variation of conditions 1 (timescales), 2 (approved plans), 4 (depth of mineral extraction), 6 (phasing plans), 41 (final restoration scheme) and 43 (water level timescales) of planning permission 01/09/0360

at

Back Lane Quarry, Back Lane, Carnforth, Lancashire, LA6 1EA

on behalf of

AGGREGATE INDUSTRIES

by

Heatons

Planning Environment Design

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INFORMATION AVAILABILITY

Electronic copies of all the documents submitted to Lancashire County Council in respect of this application are available at:

https://planningregister.lancashire.gov.uk/Search/Advanced

Paper format copies of the planning application, Environmental Statement and supporting information are available on request at the following prices:

- Paper Copy - £250
- Electronic (pdf) – no cost (also downloadable via Public Access)

All requests for paper or electronic copies should be addressed to:

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INTRODUCTION

This document is a Non-Technical Summary (NTS) prepared by Heatons on behalf of Aggregate Industries UK Limited (Aggregate Industries – the Applicant), to support a planning application at Back Lane Quarry, Back Lane, Carnforth, Lancashire (the site).

This planning application seeks permission for the deepening of the existing quarry and an extension of time to allow mineral extraction to continue at the site until 31 December 2077, with restoration being completed a year later, by 31 December 2078.

The working of Back Lane Quarry is coordinated with the development of Tarmac's adjoining Leapers Wood Quarry which also proposes to deepen the extraction area to the same depth. It is important that the working and restoration of both quarry operations are closely coordinated as the site is essentially a single void.

This NTS accompanies the Environmental Statement and provides a summary of the potential environmental impacts which have been assessed as part of the application.

Background

Back Lane Quarry is a long-established limestone quarry which benefits from a number of planning permissions granted since the 1940s. Back Lane Quarry is one of a very limited number of quarries able to meet the carboniferous limestone aggregate demand of the region.

The site is a strategic supplier of high-grade aggregates, asphalt and concrete products, all of which are essential for the repair, maintenance and improvement of the built environment in the region.

Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation. Carboniferous limestone resources are extremely limited within Lancashire and the northwest of England, being confined to the Carnforth area in the north of the county and the Clitheroe area to the south. Further afield, carboniferous limestone resources are generally very heavily constrained by designations such as National Parks and National Landscapes.

It is considered preferable for the existing quarries to seek permission to extract additional minerals from a deeper depth, rather than to pursue a lateral extension to the existing workings.

It is therefore essential that the long-term plans for the site are considered at an early stage to ensure that the resource available is not unnecessarily sterilised or compromised.

The Applicant

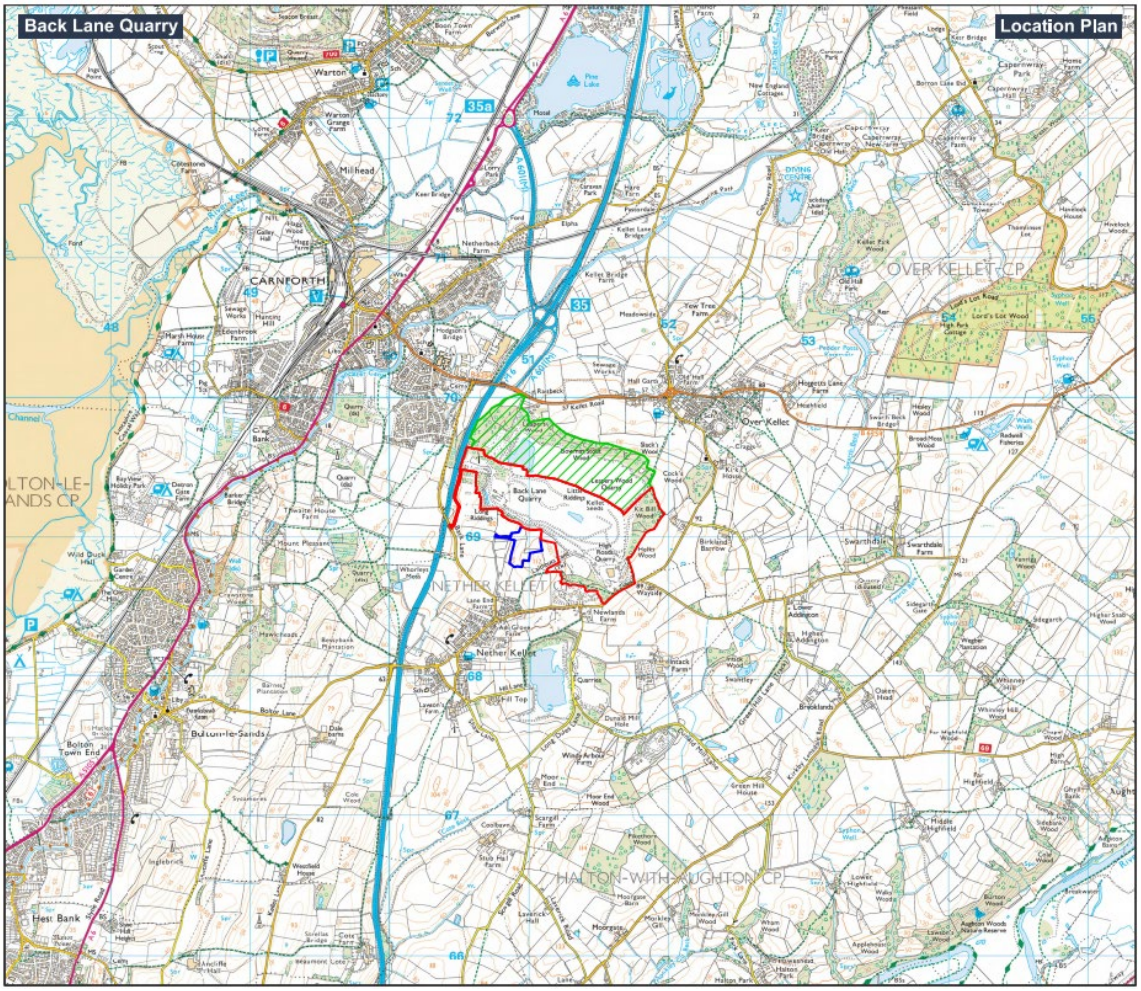
Aggregate Industries, a member of Holcim, are at the frontline of the construction and infrastructure industries, producing and supplying an array of construction materials. Products and services include aggregates, asphalt, ready-mixed concrete and precast concrete products. In addition, they produce, import and supply construction materials, export aggregates and offer national road surfacing and contracting services.

Community Involvement

In accordance with good practice and the advice within the National Planning Policy Framework (NPPF), all developers proposing to submit planning applications for major development are encouraged to undertake an element of community involvement prior to submitting their application. Community involvement is an important part of the planning process and ensures that the views of the local community are considered by the Applicant. In consultation with the Back Lane Quarry liaison committee, Public Exhibitions have been held at Over Kellet, Nether Kellet and Carnforth.

SITE AND SURROUNDINGS

The site is located around 1.5km south-east of Carnforth town centre, approximately 8.5km north of Lancaster city centre.



Site Location

The site is accessed via Back Lane to the west of the quarry. Back Lane crosses the M6 and then travels north along the eastern edge of Carnforth to a junction with Kellet Road. From here the wider strategic highway network can be accessed.

The site extends to approximately 61.5 hectares (ha) in size and comprises an active quarry with peripheral habitat areas including calcareous grassland, open mosaic habitat and woodland. The site was awarded The Wildlife Trust's 'Biodiversity Benchmark' standard in 2007/08 and has continued to do so on an annual basis. Beyond the site, the landscape is predominantly agricultural grazing land.

The site contains an electricity substation, associated wind turbine, site offices, two weighbridges and workshop buildings. North of the site offices is a lagoon and, further north, HGV parking bays. The site car park is located east of the HGV park, alongside the wind turbine compound.

The plant site, containing an asphalt plant, primary and secondary crushers, primary and secondary screens and associated control room, is located south-east of the site entrance. A laboratory is located to the north-west of the asphalt plant. Within the south-eastern extent of the site is a concrete blockworks and stocking area with associated site offices.

The nearest residential areas to the extraction area lie around 400m to the north-west on the edge of Carnforth, beyond the M6. Over Kellet village lies around 700m to the north-east and Nether Kellet village lies around 550m to the south of the quarry at its nearest point.

There are a number of Listed Buildings within 2km of the site, the closest of which is Grade II* listed 'Church of St Cuthbert' approximately 500m to the east of the site boundary. The nearest cluster of listed buildings are within the village of Over Kellet around 800m north-east of the site.

A Public Footpath (PROW ref: 1-24-FP 7) runs north to south along the eastern side of Kit Bill Wood (to the east of the quarry), reaching Main Road. Here it runs parallel with Main Road before heading east to west (PROW ref: 1-22-FP 5) across the agricultural fields to the south of the quarry.

Nearby sites of environmental importance include Kit Bill Wood, Crag Bank Site of Special Scientific Interest (SSSI) and Thwaite House Moss SSSI. The Forest of Bowland National Landscape and the Arnside and Silverdale National Landscape lie around 1.7km to the east and 1.8km to the west respectively.

Background and Planning History

Back Lane Quarry is a long-established limestone quarry which benefits from a number of planning permissions granted since the 1940s. The mineral operations are covered by an Environment Act 1995 Review of Old Mineral Permission (ROMP) which allows working until 2048. The ROMP was varied in July 2009 which allowed the controls on stockpile heights to be amended.

ENVIRONMENTAL IMPACT ASSESSMENT

Introduction

As the proposal comprises an extension of an EIA development (listed within Schedule 1 of the EIA Regulations), the proposal falls within the description of Category 24 of Schedule 1 of the EIA Regulations.

EIA Scoping

In accordance with good practice, the Applicant sought the Scoping Opinion of LCC in order to confirm the scope of the environmental assessment work required to support this planning application. In summary, the topics assessed within the Environmental Impact Assessment are:

- Landscape and Visual Impact;
- Ecology;
- Water environment;
- Traffic;
- Noise;
- Dust, Air Quality and Health;
- Blasting vibration;
- Climate change;
- Land Stability;
- Alternatives; and
- Cumulative impacts.

The Environmental Statement

In line with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the Environmental Statement has addressed the main elements of the proposals that have the potential to impact (positively and / or negatively) on:

a) population and human health;
b) biodiversity;
c) land, soil, water, air and climate;
d) material assets, the landscape; and
e) the interaction between the factors referred to in sub-paragraphs (a) to (d).

DESCRIPTION OF THE PROPOSAL

Introduction

This application seeks planning permission for a 40 million tonne deepening of currently permitted mineral extraction limits and also an extension of time to allow the mineral reserves to be fully worked and the site restored.

Existing Operations

Back Lane Quarry comprises an operational limestone quarry, a concrete products factory, an asphalt plant which supplies circa 120,000 tonnes of coated road stone products per year, areas of stockpiling, site offices and associated car parking. The wider site also accommodates a wind turbine which helps meet a proportion of the site's demand for electricity.

The site currently sells approximately 1.1 million tonnes per annum (mtpa) of high quality limestone aggregate. This is an average figure which will fluctuate depending upon demand and the wider economy.

The current permission for the site restricts working to a maximum depth of 38mAOD via planning condition and also limits the timescales for extraction and restoration of the site to 29 April 2048 and 29 April 2049 respectively.

The existing theoretical reserve remaining on site in January 2024 has been calculated to be 19.4 million tonnes (mt). However, only 6.8mt is currently accessible due to reserves being constrained by plant and machinery, buildings and historic mineral waste tips.

Description of Proposed Development

This application seeks permission to deepen the existing quarry to a depth of -37mAOD in order to extract the limestone reserves (i.e. an additional depth of 75m). The proposed changes would secure the future of this strategic site and potentially release a further 40 million tonnes (mt) of limestone, providing an overall resource of around 60mt.

The general working arrangements set out above are to be continued.

In conjunction with the deepening, this application also seeks an extension of time to work the remaining reserves. An outline of operations within each phase is set out below:

Phase A

- Mineral extraction to continue within the permitted limit of extraction, working southwards to extract rock down to a level of 38mAOD, with subsequent deepening to 23mAOD.
- Extracted mineral to be processed on site, temporarily stocked and transported off-site by HGV to point of sale.

Phase B

- Partial removal of existing quarry tip, to enable extraction of rock below.
- Mineral extraction to continue within the permitted limit of extraction, with deepening to a depth of 23mAOD.
- Extracted mineral to be processed on site, temporarily stocked and transported off site by HGV to point of sale.

Phase C

- Continued removal of existing quarry tip to enable extraction of rock below.
- Mineral extraction to continue within the permitted limit of extraction, with deepening to a depth of 23mAOD, together with the extraction of rock beneath the existing stockyard.
- Extracted mineral to be processed on site, temporarily stocked and transported off site by HGV to point of sale.

Phase D

- Removal of Back Lane Quarry processing plant to enable extraction of rock below.
- Mineral extraction to continue within the permitted limit of extraction, with deepening to a depth of 8mAOD and -7mAOD, together with the extraction of rock beneath the existing stockyard and processing plant areas.
- Extracted mineral to be processed on site utilising mobile plant, to be located adjacent to the extraction face. Material to be temporarily stocked within the quarry void and transported off site by HGV to point of sale.

Phase E

- Mineral extraction to continue, with deepening to a depth of -37mAOD.
- Extracted mineral to be processed on site utilising mobile plant, to be located adjacent to the extraction face. Material to be temporarily stocked within the quarry void and transported off site by HGV to point of sale.

Timescales

It is proposed to extend the currently permitted timescales from 29 April 2048 to 31 December 2077 for mineral extraction and from 29 April 2049 to 31 December 2078 for restoration.

Employment

The site currently directly employs 112 full time equivalent staff. This comprises 25 staff at the quarry, 3 at the laboratory, 6 at the asphalt plant, 16 at the concrete products factory and 62 at the High Roads regional office. In addition to this there are a significant number of hauliers and contractors reliant upon the continued operation of Back Lane Quarry. No changes are proposed to the current number of staff employed on the site, albeit the proposals would be likely to result in additional jobs being created in the future.

Hours of Operation

The site operates under the following operating hours:

- Blasting - between the hours of 1000 and 1700 Mondays to Fridays (except Public Holidays) and between 0830 and 1200 on Saturdays and at no other time, except in emergency situations.
- Soil movements including construction of storage, landscape or baffle mounds – between 0730 and 1800 hours on Monday to Fridays (except Public Holidays) and between 0730 hours and 1300 on Saturdays.

Due to the critical need for flexible working to enable the on-site roadstone coating plant to service specific overnight National Highways and Local Authority road construction projects, no restrictions are placed on hours of operation of the mineral extraction activities within the quarry or the coating plant located within the site.

HGV Movements and Access

The average number of HGV export trips per day is 179 (179 in / 179 out) with an associated average daily tonnage of 3,983t. The annual output of the quarry (and therefore the average daily HGV movements) would be maintained as existing.

Access to the quarry is from Back Lane to the west of the site. This access is used by all quarry traffic, the roadstone coating plant traffic and all HGV traffic from the concrete products plant. There is also access from Main Road to the south of the site. However, this southern access to the site is restricted to use only by cars and light goods vehicles from the concrete products plant and offices.

Restoration

The restoration of Back Lane Quarry would be undertaken as a combined restoration scheme for both Back Lane Quarry and the adjacent Leapers Wood Quarry. An approved restoration scheme already exists for the restoration of these sites. However, the current scheme is based on mineral reserves being worked to a depth of 38mAOD. This planning application seeks permission to extract mineral to -37mAOD and therefore a revised restoration scheme has been prepared. The proposed restoration scheme recognises the potential for a multi-purpose after-use consisting of water and land-based recreational activities centered on and around a central lake, supplemented by discrete areas of nature conservation habitat on the quieter outer fringes.

ALTERNATIVES

A number of alternative options have been considered regarding the proposed development. The 'do nothing' option would result in mineral extraction operations ceasing by 2048 (in practical terms this would be by 2030 given the remaining accessible reserve) and the final restoration of the site being completed by 2049. This would not only sterilise / prevent extraction of a high quality mineral resource, which is a regionally important site for carboniferous limestone aggregate, asphalt and concrete products supply for north west England, but it would also result in the loss of existing jobs as well as indirect jobs and input to the local economy.

Alternative sites for crushed rock supply have been considered and it is acknowledged that, in the very short term, there are alternative sources of crushed rock available. However, beyond 2030 there will be a significant reduction in the number of permitted sites within Lancashire and the surrounding authorities. Given that only around 5 years of practical reserve remains at the site, the proposed development is essential in order to secure the continued supply of limestone over the longer term.

Alternative restoration options have been given consideration as part of the environmental assessment work. The proposed scheme of working and restoration has been designed in order to be environmentally acceptable, to provide for the safe and efficient extraction of the limestone resource and to provide an afteruse of the quarry which will benefit both the local community and visitors to the site.

The proposed scheme is therefore the preferred option and is considered to represent the most environmentally acceptable option to ensure the continued supply of essential carboniferous limestone aggregates to the region.

SUMMARY OF ENVIRONMENTAL EFFECTS

The following section summarises the main topic areas that have been assessed in the preparation of the Environmental Statement. The assessment of the topic areas has been undertaken by employing a wide range of independent specialist consultants. Full technical reports relating to the evaluation of the potential impacts have been prepared and form part of the Environmental Statement accompanying the planning application.

Landscape and Visual Impact

A Landscape and Visual Impact Assessment has been prepared to support this planning application which appraises the potential for Landscape Character and Visual Change / Effects between the baseline of the permitted development (i.e. the current situation) against the proposed development changes.

The site is relatively discretely set and contained within its established extraction area void, the majority of the site being operational. There is generally a strong vegetation screen surrounding the site to the east, south and west. Both operational and historic mineral workings are typical features within the surrounding landscape.

Although the site is not located within any national landscape designations such as a National Park or National Landscape, the site is located approximately 1.8km to the south and east of Arnside / Silverdale National Landscape and around 1.7km to the west of the Forest of Bowland National Landscape (at their nearest points). Thwaite House Moss SSSI and Crag Bank SSSI are also located between 1 and 2km of the site. A number of Listed Buildings are located within 2km of the site, the closest being Grade II* Church of St Cuthbert, which lies around 500m to the east of the site boundary.

The assessment concludes that no significant adverse landscape effects are anticipated at either the operational or restoration stages of the proposed development. Progressive and final restoration offers both reinstatement of locally characterful permitted elements and features as well as an increase in Biodiversity Net Gain (BNG).

Thirty-one viewpoints were assessed, with the assessment concluding that seven will receive a Slight Adverse Effect from the proposals, one Very Slight Adverse Effect, three Minimal Adverse Effects, nineteen Neutral Effects and one Moderate Beneficial Effect.

Post restoration the proposed development will result in a landscape character the same / very similar to the permitted scheme, with a Neutral Effect overall compared with the permitted scheme. The assessment also confirms that there will be no significant cumulative adverse effects on landscape or visual receptors.

The LVIA concludes that, based upon landscape and visual grounds, the site is a good location for continued crushed rock extraction, set within an existing operational site where the disturbance / effects of quarrying activities are already present in the landscape. Furthermore, the site is generally well screened and integrated into the landscape. At final restoration, the proposals will result in a landscape character very similar to the existing permitted scheme, comprising a lake feature with areas of shallows and reedbeds around the periphery and opportunities for leisure / recreational infrastructure to be established. The site would be managed and maintained during a long term aftercare period.

The proposed development is considered to be acceptable and appropriate in landscape and visual terms, and in accordance with the identified landscape orientated designations and policies.

Ecology and Biodiversity

An assessment has been undertaken of the likely effects of the proposed development on the ecology, biodiversity and nature conservation status of the land contained within the site and its surroundings.

Potential impacts on the following ecological receptors have been considered:

- Morecambe Bay (SAC, SPA, RAMSAR, SSSI)
- Leighton Moss (SPA, RAMSAR, SSSI)
- Morecambe Bay Pavements (SAC)
- Calf Hill and Cragg Woods (SAC)
- Bowland Fells (SPA)
- Thwaite House Moss (SSSI)
- Priority Habitats
- Biological Heritage Sites
- Badgers
- Breeding Birds
- Invertebrates

The assessment has taken account of national planning policy and other policies, legislation and guidance in respect of nature conservation and protected species in identifying appropriate avoidance, mitigation, and compensation measures to take. The assessment indicates that no statutory or non-statutory nature conservation sites will be adversely affected by the proposal and no protected species or habitats will be adversely affected.

Delivery of the mitigation strategy will avoid adverse effects on bats, badgers, birds and habitats as identified in the ecological surveys, and enhancements in biodiversity are anticipated through habitat creation and implementation of a monitoring strategy.

Not significant and minor positive effects are predicted with a high degree of confidence to receptors. The proposed restoration and aftercare of the site will ensure that ecological receptors are protected and habitats enhanced.

Therefore, it is considered that the proposed development accords with the Development Plan and national planning policies concerning ecology and nature conservation.

Transport

A Transport Assessment has been prepared to support the planning application which comprises identification of development trip generation and assignment, link and junction capacity analysis, review of general site accessibility by sustainable travel modes and detailed construction traffic effects. HGV routing from the site is controlled through an existing Section 106 Legal Agreement. The same routing requirements would continue to apply as part of this application.

The access is an established location and on-site observations indicate that it operates satisfactorily. Personal Injury Accident (PIA) data has been obtained and this suggests there are no road safety issues in the vicinity of the site.

Development related traffic generation associated with the proposed development has been calculated based upon both existing site operations and projections of future traffic levels. In total, over the course of the daytime 12-hour period, Back Lane Quarry operations typically give rise to approximately 300 two-way vehicle movements, of which around 260 comprise HGV movements. The proposed development would result in a total of 33 HGV movements (total two-way) during the AM peak hour, equating to just 1 two-way HGV movement every 2 minutes during this peak network period, which is not considered significant in typical transport assessment terms.

An assessment of operational capacity of key junctions used by quarry traffic demonstrates that, for the majority of the study area that has been considered, the highway network currently operates with reasonable, if not notable, levels of spare capacity. The assessment therefore concludes that the proposed extension of time would not have any significant effects on the capacity of existing road junctions.

The Transport Assessment concludes that the traffic related environmental effects of the proposal will not be significant and, therefore, no mitigation has been proposed. Accordingly, the residual effects relating to development traffic are anticipated to be negligible.

Noise

A Noise Impact Assessment has been carried out as part of the preparation for this planning application. The assessment included noise monitoring at the nearest noise sensitive receptors to Back Lane Quarry.

The purpose of the assessment was to establish that the ongoing mineral extraction operations on the site with increasing depth of workings would not be expected to generate noise levels that would exceed the existing site noise limits at the nearest residential properties to the site.

The routine noise monitoring of the site has been reviewed to establish that the site noise levels comply with the site noise limits stipulated within conditions 22 and 23 of the latest Review of Old Mineral Permissions (ROMP) for the site in 2006 (ref: 1/03/1186).

The relevant conditions state:

22. Noise emitted from the site shall not exceed 55dB L_{Aeq} (1 hour) (free field) when measured from any of the following properties at the point closest to the noise source.

a) Wayside NGR 518 686
b) Helks Wood Farm NGR 521 691
c) Hawthorns Caravan Park NGR 514 684
d) 94 Windermere Road NGR 504 697

23. Notwithstanding condition 22, outside of the hours of 0700 to 2100 hours Monday to Friday, 0700 to 1300 on Saturdays and at any time on Sundays and Public Holidays, noise emitted from the site shall not exceed 42 dB L_{Aeq} (1 hour) (free field) as defined in this permission when measured from any of the properties listed in condition 22.

The noise criteria in place for the site are in line with current advice from the Government contained in the web document 'Planning Practice Guidance', dated March 2014 and the 'Minerals' and 'Noise emissions' elements of the guidance.

The review of the site noise monitoring has confirmed that the site noise levels have not exceeded the site noise limits in around twenty years of monitoring. Records also indicate that there have been no complaints received by the site regarding noise.

Consideration of the site plans provided by the operator and the topography of the site in relation to the nearest noise sensitive receptors have been used to demonstrate that site noise levels at the receptors will be no higher than the current levels and the proposals will therefore have no increased impact on the amenity of the area.

The consistent compliance with site noise limits that are in line with current government guidance regarding noise from minerals site and the increasing depth/barrier attenuation afforded by the existing topography demonstrates that the site can continue to be worked within environmentally acceptable noise levels.

The cumulative impact of the continuing operations at Back Lane Quarry with the operations at the adjacent Tarmac Leapers Wood Quarry has also been examined and also shown to be of low impact.

The mineral extraction operations, processing operations and use of the asphalt plant and concrete block works will not change from the current situation. Following completion of the mineral extraction works, the void will be restored as per the proposed revised restoration scheme.

In summary, it is proposed that the existing noise conditions continue to be implemented should planning permission be granted and that, subject to the operator adhering to the existing noise limits, no significant noise effects are anticipated associated with the proposed development.

Air Quality

An assessment has been undertaken of the potential air quality and dust impacts of the proposed development for deepening mineral extraction and extending the lifetime of operations.

The study area for air quality extends up to 400m from the operational boundary of the existing quarry footprint. Human receptors have been identified within the study area and assessed accordingly. The nearest receptors are listed below:

- Windermere Road, Carnforth
- Helks Wood Farm
- Wayside
- Hawthorns Caravan Park (nearest mobile home)

The proposed development is to increase its depth and the duration of extraction and, therefore, the distance between the quarry and these receptors remains unchanged. Ecological receptors located within the study area have been identified and discussed separately, with such effects being considered to be not significant.

The following potential sources of emissions have been considered:

- Dust deposition
- Fine Particulates
- Traffic Emissions

Taking into consideration the proposed development design, good practice construction methods and integrated mitigation, the extraction, processing, stocking, restoration and movement of material on the application site will not generate excessive levels of fugitive dust. Furthermore, deepening the quarry is likely to provide a degree of additional dust mitigation.

To ensure mitigation is effectively implemented, the Air Quality Assessment recommends a detailed scheme of dust management and monitoring be prepared should planning permission be granted.

Human Health

A Health Assessment Briefing Note has been produced to support this planning application.

Dust and human health

The Air Quality Chapter within the Environmental Statement provides an in-depth overview of air quality monitoring results. To summarise, air quality monitoring results show that maximum daily average PM_{10} concentrations recorded over the monitoring period at both monitoring stations (Over Kellet and Helks Wood Farm) remain well within Air Quality Strategy (AQS) objective thresholds set to be protective of the environment and human health (40 µg/m^3).

Furthermore, air quality monitoring results show that maximum daily average $PM_{2.5}$ concentrations recorded over the monitoring period at Over Kellet monitoring station remains well within AQS objective thresholds set to be protective of the environment and human health (20 µg/m^3).

The following mitigation measures for air quality and dust impacts, which are already being implemented on site, will continue to be implemented:

- the adoption of best practicable means;
- mobile plant are to be regularly serviced and equipped with effective exhausts;
- haul roads are adequately maintained;
- vehicle speed control on access and other trafficked areas to reduce fugitive dust;
- ensure that all commercial vehicles pass through a wheel washing facility prior to leaving the site to prevent the deposition of material onto the public highway;
- all vehicles leaving the site onto the public highway shall be suitably sheeted;
- in the unlikely event that dust or mud from the site has been deposited on the public highway, a road sweeper will be employed;
- regular inspections (and logging) of the public highway in order to identify the need for any cleaning requirements;
- loading and unloading of vehicles would ensure drop heights are minimised;
- water sprays or surface binders will be utilised to maintain damp surfaces on exposed tip and stockpile faces, and any exposed friable surfaces during dry and windy weather;
- use of filtration equipment on the exhaust emissions from drill rigs and the removal of any loose material from the area of blast prior to detonation;

- appropriate training of site employees in order to ensure that they are conversant with the site dust control strategy;
- staff induction will include awareness of track-out of dust or mud from the site and to report signs of materials deposited on the public highway.

The following dust generating operations have been assessed as part of the assessment:

- soil stripping and overburden removal;
- the extraction of the limestone;
- transportation of material on-site;
- material processing;
- wind erosion from dry, unvegetated surfaces; and
- vehicle movements and their exhaust emissions.

Following best practice measures and implementation of the above mitigation, no adverse impacts on human health are anticipated from these dust generating activities.

Continued implementation of the above mitigation measures would result in no significant residual or cumulative impacts on human health as a result of the proposed development.

Groundborne Vibration and Overpressure

Mineral extraction is undertaken by drilling and blasting, with the limestone then loaded and hauled by dump trucks to the processing plant. The application seeks to extend the lifetime of mineral extraction and, therefore, the impact from blasting operations continuing beyond 2048 has been assessed.

The assessment considers groundborne vibration and airborne vibration (overpressure). Groundborne vibration happens when an explosive detonates within a borehole and stress waves are generated causing very localised distortion and cracking. Such vibration is always generated even by the best designed and executed of blasts and will radiate away from the blast site attenuating as distance increases. Airborne vibration waves are generated within the atmosphere where the term ‘air overpressure’ is used to encompass both its audible and sub-audible frequency components. Airborne vibration waves can be considered as sound waves of a higher intensity and will, therefore, be transmitted through the atmosphere in a similar manner.

All blasts at Back Lane Quarry are monitored, generally at the nearest vibration sensitive property to any blasting event. This practice will continue.

A review of data collected over the past three years from blasting events at Back Lane Quarry showed that all measured blasts were found to comply with the current permitted blasting limits.

Prediction of airborne vibration intensity is difficult due to the variability of meteorological conditions such as wind speed, wind direction, temperature, humidity and cloud cover. It is because of the variability of British weather that it is standard good practice to control air overpressure at source and hence minimise its magnitude at distance, even under relatively unfavourable conditions.

Such control is achieved in a well-designed and executed blast in which all explosive material is adequately confined.

Groundborne Vibration and Air Overpressure Management

Current blasting practices at the site include predictive modelling which ensures that compliance with the recommended vibration criteria is achieved.

The current conditions incorporated within the extant planning permission which control blasting at the site are:

29. The vibrations from 95% of all blasts in any calendar year shall not exceed 6mm/sec peak particle velocity in any plane at the property identified in condition 22 or any other location first agreed by the County Planning Authority measured at a point closest to the blast shotholes.

30. Notwithstanding condition 29, the vibrations from any blast shall not exceed 9mm/sec peak particle velocity in any plane, when measured at the properties identified in condition 22 or any other location first agreed by the County Planning Authority measured at a point closest to the blast source.

It is proposed that these conditions continue to be implemented should planning permission be granted.

Minimising ground and airborne vibration increases the efficiency of blasting operations as well as protecting the amenity of sensitive receptors. No changes are proposed to the current procedures for managing and monitoring blasting operations at the site and existing limits will continue to be in place. The proposals do not result in working any closer to properties than at present. The assessment of groundborne vibration and air overpressure concluded that there would be no significant effects associated with the continuation of blasting at Back Lane Quarry.

Water Environment

An assessment of the water environment in the vicinity of the site has been undertaken. Future mineral extraction is proposed to a depth of -37mAOD, merging Back Lane Quarry and Leapers Wood Quarry within a single quarry void. The volume of water entering the quarry void will increase with depth and flow from the following sources: direct rainfall, diffuse flow from the mass of the limestone and conduit flow from truncated karst features.

The maximum theoretical volume of water that could potentially enter the quarry void has been calculated. The volume of water would be managed via dewatering (pumping), with discharge to ground via the Leapers Wood sinkhole, the Back Lane lagoon sinkhole and the Back Lane French Drain, either individually or in combination.

The majority of groundwater within the limestone is discharged to a spring located 1.5km to the north of the site. The resultant water discharges to a tributary of the River Keer.

Dewatering

The active pumping of water from within the quarry void (termed 'dewatering') will continue to enable safe and efficient mineral extraction as it allows the site to be worked dry. This will cause temporary lowering of the groundwater table in the vicinity of the site. By returning the majority of water to the aquifer, down-gradient of the site, any reduction in groundwater levels or baseflow to the north and north west of the site will be mitigated.

Upon cessation of mineral extraction dewatering of the quarry will cease and the quarry void will start to fill with water, eventually creating a lake feature. Whilst the water level within the lake will naturally rest at a level of around 45m above Ordnance Datum, passive outfall structures will be constructed to convey water to the existing discharge points. This will help to control water levels within the quarry void.

Based upon the proposed water management and the characteristics of the structural geology, it is considered that there will be no discernible impacts to any of the identified environmentally sensitive sites or groundwater-supported surface water features or groundwater abstractions. Continuation of the existing groundwater level monitoring regime is proposed.

Flood Risk

Flood risk associated with the proposed development has been assessed. The current discharge routes will continue to be used for the duration of mineral extraction. Volume calculations, including allowance for climate change effects, indicate that the total

discharge of water from the quarry can be restricted to the greenfield run-off rate throughout the proposed development. During storm events water would be stored temporarily within the quarry void. The site provides massive flow balancing capacity, thereby allowing subsequent discharge to be undertaken at a controlled, appropriate flow rate.

During the extractive phase, sumps within the quarry will ensure that there is sufficient settlement provision to remove suspended solids from the discharge. Existing pollution control and best practice measures would continue for the life of the site and there will be no risk of pollution to groundwater or surface water. Furthermore, no cumulative impacts as a result of dewatering have been identified.

Assuming continuation of existing dewatering, mitigation and monitoring measures, no significant adverse impacts are anticipated on the water environment as a result of the proposed development.

Climate Change

Key considerations when assessing the proposals' vulnerability to climate change include pollution, hydrology, flood risk and ecology (i.e. the impacts of climate change on habitats and species).

In order to minimise emissions associated with their use, all mobile plant and machinery would be regularly serviced and maintained and would be switched off when not in use. Furthermore, given both the currently permitted and proposed timescales for mineral extraction and restoration of the site, it is considered reasonable to assume that technology relating to the viability and performance of electric mobile plant would remove the need for diesel mobile plant to be used on site. The use of electric mobile plant and equipment would significantly reduce the carbon footprint associated with the use of mobile plant and machinery. Furthermore, as technology enables the use of electric HGVs to become a viable option, the Applicant would progressively replace its fleet of diesel HGVs to electric powered vehicles.

The development proposal would not result in any significant impacts with respect to hydrology, hydrogeology or flood risk even when taking account of the predicted likely effects of climate change.

Taking into consideration the extensive mitigation measures which are integrated into both the current and proposed site operations at Back Lane Quarry, as well as the Applicant's commitment to the continual improvement of its activities across all business

units, it is considered that the proposed development would not have any significant environmental effects in terms of climate change.

Land Stability

Both Back Lane and Leapers Wood quarries are worked in a series of benches using conventional drill and blast techniques with hydraulic excavators and dump trucks. The excavation profile employed has been used throughout the life of both quarries with only localised modifications necessary from time to time to suit site conditions and with no significant issues relating to instability.

Two historical tips lie within the quarry complex of Back Lane and Leapers Wood Quarry (referred to as West Tip and Tip 1). Neither tip has any recorded evidence of instability associated with its structure.

A Stability Assessment has been carried out to address the stability of the west slopes at Back Lane and Leapers Wood Quarries and the stability of historical Tip No.1 at Leapers Wood.

Kinematic analyses of the rock slopes and limit equilibrium analyses of the tip structure have been carried out. The analyses indicate a low potential for instability from all proposed face azimuths for the western slopes of the site. The analyses also indicate a generally low to moderate potential for plane failure. However, it is noted that where plane failure is reported, it is anticipated to be associated with moderately steeply inclined discontinuities (and not bedding planes) and that as such, bench scale failures would likely occur during mucking of the blast pile. Given the assumed ground conditions encountered at the site it is considered that the findings of the kinematic analyses indicate that the proposed structure will be stable and that there would be no adverse effect on the M6 National Highways asset.

In terms of the existing tip at the site, the results of the stability analyses indicate that the tip is overall stable and historical observations confirm this finding. Given the ground conditions encountered at the site it is considered that the calculated Factor of Safety values are adequate for the as-built tip structure and that there would be no adverse effect on the M6.

Daily visual inspections of excavations by Tarmac and Aggregate Industries' personnel would be carried out, as required by The Quarries Regulations 1999, to identify any evidence of instability or variation in expected ground conditions. Geotechnical

assessments would also be carried out by a geotechnical specialist throughout the life of the extraction operations.

Accidents and Hazards

The site operators are committed to achieving the highest standards of health and safety for its operations, sites, workforce, contractors, customers and the general public. A companywide health and safety management system is also in place. This helps ensure that the risk of accidents happening is minimised as far as practicably possible.

It is considered that the likely potential impact of the proposed development in terms of the risk of accidents will be very low. Therefore, no additional mitigation measures are considered necessary over and above those which are inherent within the proposed development design.

CONCLUSIONS

This Non-Technical Summary sets out the findings of the full Environmental Statement which considers the potential for impacts associated with a wide range of identified topic areas. Consideration has been given to the potential for environmental and amenity impacts within a planning context, the degree of any likely impact and the mitigation measures provided to address such impacts where they arise.

The working of Back Lane Quarry is coordinated with the development of Tarmac's adjoining Leapers Wood Quarry which also proposes to deepen the extraction area to the same depth. It is important that the working and restoration of both quarry operations are closely coordinated as the site is essentially a single void.

The site is a strategic supplier of high-grade aggregates, asphalt and concrete products, all of which are essential for the repair, maintenance and improvement of the built environment in the region.

Minerals are a finite natural resource and can only be worked where they are found. Carboniferous limestone resources are extremely limited within Lancashire and northwest of England, being confined to the Carnforth area in the north of the county and the Clitheroe area to the south. Carboniferous limestone resources are otherwise generally very heavily constrained by National Parks and National Landscapes.

It is considered preferable for the existing quarries to seek permission to extract additional minerals from a deeper depth, rather than to pursue a lateral extension to the existing workings. It is therefore essential that the long-term plans for the site are considered now to ensure that the mineral resource available is not unnecessarily sterilised or compromised and that continuity of supply is secured.

No unacceptable impacts have been identified in relation to residential amenity, air quality, designated nature conservation sites, ecology and biodiversity, the water environment, landscape character or the highway network.

The mitigation of potential impacts through the imposition of planning conditions and appropriate planning agreements is in accordance with Development Plan policy and national planning advice. No significant residual or cumulative environmental impacts are anticipated to result from the development.

The proposed scheme will bring about a number of environmental and significant economic benefits. This includes providing an essential supply of carboniferous limestone aggregate and associated products, helping to meet the need for crushed rock within the region, alongside significant benefits to the local economy from the jobs created and local expenditure.