

Appendix 1.2

Updated Non Technical Summary



Proposed extension to Linhay Hill Quarry Non-Technical Summary

E&JW Glendinning Ltd

August 2020



Notice

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Rev 3.0	Reg 22 Response #5 submission	AH/TM	TM	ATF	ATF	7/8/20

Abbreviations

AOD	Above Ordnance Datum (Sea level)
CEMP	Construction Environmental Management Plan
CBLF	Chercombe Bridge Limestone Formation
DNPA	Dartmoor National Park Authority
EIA	Environmental Impact Assessment
ES	Environmental Statement
Ha	hectares
HGV	Heavy Goods Vehicles
LVIA	Landscape and Visual Impact Assessment
NTS	Non-Technical Summary
PPG30	Planning Policy Guidance 30 (Noise)
ppv/s	peak particle velocity/second (blast measurement)
RSA	Road Safety Audit
SDCC	South Devon Community College
SSSI	Site of Special Scientific Interest
ZTV	Zone of Theoretical Visibility

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1. Introduction

Non-Technical Summary

- 1.1. This is a Non-Technical Summary of the Environmental Statement that accompanies a planning application submitted by E&JW Glendinning Ltd for an extension to Linhay Hill Quarry, Ashburton.
- 1.2. The Environmental Statement (ES) consists of:
 - 1) The main volume, together with technical reports in the appendices which draws together design, engineering and environmental information about the proposals and describes the need for the extension, considers alternatives and assesses the effectiveness of mitigation measures in reducing adverse potential impacts and enhancing the benefits. The original submissions have been updated by Responses to Regulation 22 Requests (Responses #1 to #5) and by submissions of Further Information provided by the Applicant (nos #1 and #2).
 - 2) This Non-Technical Summary (NTS). This version of the NTS has been updated to reflect the contents of Responses to Regulation 22 Requests (Responses #1 to #5) and of the Further Information provided by the Applicant documents (nos #1 and #2).
- 1.3. Copies of all documents comprising the planning application are available via a website: (www.linhayhillquarryextension.co.uk) or can be obtained from the applicant's agents:

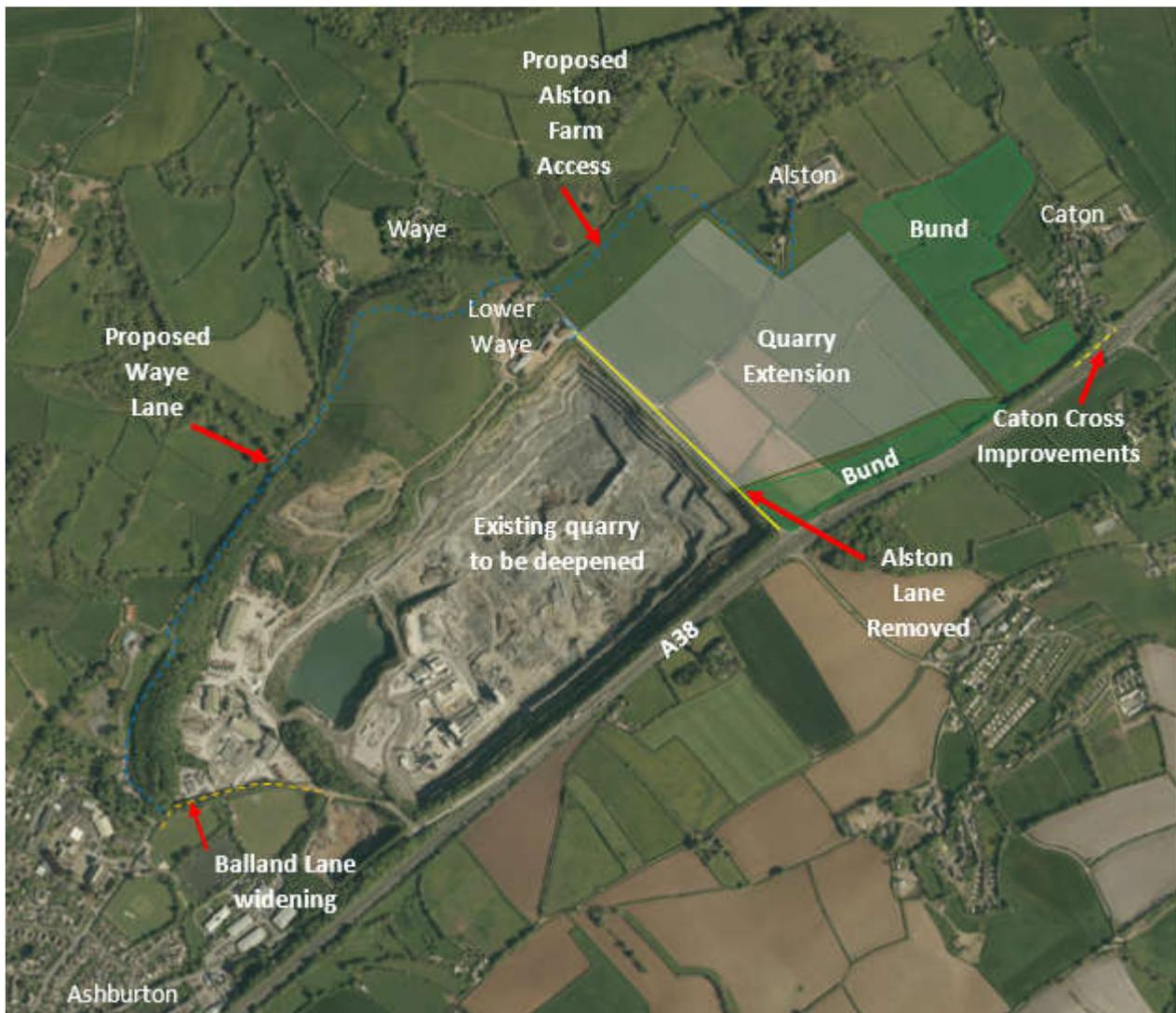
Atkins Ltd, The Octagon, Pynes Hill Court, Rydon Lane Exeter, EX2 5AZ. Tel 01392 352900.
email info@linhayhillquarryextension.co.uk
- 1.4. The Environmental Statement with appendices is available on compact disc for £15. The ES is available printed for £150. The appendices are only available on compact disc. Copies of all documents comprising the application can be viewed at the DNPA Headquarters at Parke, Bovey Tracey, TQ13 9JQ and on the DNPA application website at www.dartmoor.gov.uk (application number 322/16).

Summary of Background and Proposals

- 1.5. E & JW Glendinning Ltd. is an independent family business which has operated quarries in Devon since 1950 and has a long history of supplying a range of essential materials – like aggregates, ready mix concretes, asphalt, blocks, paving, sand and lime – for new roads and highways maintenance, building construction and agricultural use across Devon.
- 1.6. The Company, hereafter referred to as Glendinning, supplies customers within a 100 mile radius, predominantly in the Exeter, Teignbridge, Torbay and Plymouth areas. Its customers include:
 - Small building firms (approx. 1,800)
 - Direct to the general public for home improvements
 - Local authorities – highways maintenance for Devon County Council, Torbay Council, Plymouth and Exeter City Councils
 - Major contractors – Balfour Beatty, Kier Group, Galliford Try and Dawnus
 - House builders – Midas, Cavanna, Linden Homes, Stephen Hoskin Construction Ltd and Persimmon
 - Civil engineering contractors – South West Highways and Amey
 - Groundwork firms – Steve Hoskins Construction and Fred Champion
 - National and regional builders' merchants – Jewson, Travis Perkins, RGB Building Supplies, Inter-Line Building Supplies and Bradfords
 - Agricultural merchants, farmers and contractors
 - Specialist sector companies – Wolf Minerals speciality metals company and British Ceramic Tile.
- 1.7. Linhay Hill Quarry, a major limestone quarry located to the north-east of Ashburton is the main site in the company's business. It has grown from a relatively modest operation to now become one of the most important sources of limestone in the South West Peninsula. There are only three other major quarries in Devon producing limestone (which are all operated by the same international company). As such, the quarry is an important strategic asset for the South West, both for supply of limestone and for providing competition in the market.

- 1.8. As at the end of 2020, the reserves remaining in the quarry are sufficient for a further five years viable production at the current rate. The extension is needed so that the life of Linhay Hill Quarry, its products and the economic benefits and jobs it creates can be secured for the future. This extension is not about increasing productivity or profit for Glendinning. It is about maintaining the current business activity which employs 240 people and contributes £6 million a year to the Devon and Dartmoor local economy from the procurement of goods and services. The additional extraction area will yield sufficient material for a further 60 years at the quarry's current rate of extraction.
- 1.9. Linhay Hill Quarry is immediately adjacent to the A38, which runs along the quarry's south-eastern boundary, and at this point is the boundary of the Dartmoor National Park.
- 1.10. The proposed quarry extension area is farmland owned by Glendinning to the north east of the existing quarry and alongside the A38, which is underlain with limestone. Part of Alston Lane and the access to Alston Farm will have to be removed to allow the extension area to be quarried and a replacement, called Waye Lane is included in the proposals. The narrow part of Balland Lane will also be widened because of a small amount of extra traffic from Waye Lane. This will also help relieve traffic congestion at South Devon Community College.
- 1.11. The extent of the existing quarry and the extension area are shown in Figure 1.1 below, together with the route of Waye Lane to replace Alston Lane, the new access to Alston Farm, the length of Balland Lane to be widened and the improvements to Caton Cross. Overburden (the soil on top of the limestone) will be used to create screening banks ("bunds") on adjacent land to south east and north east.
- 1.12. The figure also shows the surrounding area, including the A38, which is the boundary of the National Park, the location of the nearest dwellings at Caton, Alston, Waye and Lower Waye as well as the north eastern part of Ashburton.

Figure 1-1 Existing quarry and proposed quarry extension area and surroundings



2. Project Description

History of the Proposals

- 2.1. The proposals have evolved as a result of consultation, review by the applicants and the iterative process of Environmental Impact Assessment. The proposals in the application are a major revision of the original working scheme that was announced in late 2014. The revised proposals which are now incorporated into the application are described below.
- 2.2. The main difference from the pre-submission proposals is that the existing quarry is to be further deepened to 0mAOD which will allow considerably more overburden from the quarry extension area to be backfilled into the existing quarry, rather than used to form further bunding in the area surrounding the quarry extension. This means that 48% of the overburden will be used for bunding, instead of 84% as was originally proposed. The remaining 52% will be backfill. As a result the new quarry areas will be opened up more gradually across the extension site, taking some 46 years to complete, instead of about 27 as was originally proposed.
- 2.3. As a result of these changes, the footprint of the extension area has been reduced by some 12 hectares (ha), reducing the associated impacts on the surrounding area.
- 2.4. More detail is now provided about restoration, and a different larger area will be available for amenity and informal recreation uses once the worked out quarry fills with water.

The Revised Proposals

- 2.5. The proposals are as follows:
 - Extension to the existing Linhay Hill Quarry for extraction of minerals and creation of new permanent landscaping bunds with associated landscaping, surface water management works and other environmental improvements on land adjacent to the quarry; Backfilling of overburden and quarry spoil from later stages of the quarry extension.
 - Closure and removal of a section of Alston Lane and junction onto the A38; Provision of a new road as a replacement for Alston Lane; Diversion of Ashburton footpath 16; Removal of existing accesses to Alston Farm and Lower Waye, and replacement with new accesses; Diversion of water supply pipe and relaying of existing underground telecommunication duct; *replacement of existing overhead electricity lines with underground cables*;
 - Widening of Balland Lane and alterations to the coach turning circle at South Dartmoor Community College, with temporary construction compound;
 - Flood mitigation works; Provision of public access and footpaths, with amenity area in walled garden. Provision of quarry viewpoint with information facilities and parking as appropriate.
 - Continuation of quarrying and all currently consented operations for 60 years after commencement of proposals, including retention of existing plant, equipment and buildings, for processing of minerals and recycled aggregates, manufacture of aggregate products and completion of existing tip. Extraction of minerals in existing and extended quarry to full extents to 0m AOD, Raising the sides of the existing settling pond to increase its capacity, and providing for its capping and subsequently for a temporary bund to screen mobile processing plant for final part of quarrying.
 - Progressive restoration and landscaping of the existing and extended quarry with provision for nature conservation, biodiversity and geology.
 - Following the cessation of quarrying, final restoration to a combination of amenity, informal recreation, and nature conservation in the main part of the extended quarry area with amenity area on part of capped Balland Pit and public access via circular path; and employment in the workshop area and part of capped Balland Pit. Ongoing management of the restored areas and after uses.
 - Improvements to the off-slip lane at Caton Cross to more safely accommodate any additional traffic that might use Caton Lane after Alston Lane is closed.
- 2.6. The proposed quarry extension area is approximately 32 hectares overall. About 21 hectares will be used for extraction while the remaining 11 hectares will be used for tipping overburden into screening

bunds. Further land will be used for associated landscape planting, the replacement route for Alston Lane and ecological mitigation.

- 2.7. The development will start with widening Balland Lane and building the replacement route for Alston Lane and accesses to Alston Farm and Lower Waye; diversion of public footpath and services; and other preliminary works. Following this, the extension area will be quarried progressively in stages in a north easterly direction from the existing quarry at Linhay Hill, with screening bunds formed by tipping the overburden from the earlier stages of the extended quarry area.
- 2.8. The screening bunds and higher benches of the extended quarry will be progressively restored in line with ongoing extraction. The final stage of quarrying at Linhay Hill involves extracting the rock under the processing plant in the south eastern corner of the quarry. Final restoration will take place after quarrying finishes. Once dewatering stops the quarry will fill with water to form a lake which will provide opportunities for both public amenity and nature conservation features, with employment uses in the southern corner of the site based on the existing workshop area.
- 2.9. These stages are described in the table and timeline below, and illustrated in the figures at the back of the NTS. Further detail is provided in the submitted drawings.

Table 2-1 Linhay Hill Quarry – Stage progression

Stage	Years from start of operations (approx.)	Bund building	Extraction in LHQ*	Extraction in Extension area
Stage 0. Widening of Balland Lane; construction of the replacement route for Alston Lane and accesses to Alston Farm and Lower Waye; diversion of public footpath and services; and other preliminary works. Improvements to Caton Cross. Quarrying continues in the existing quarry.	Years 1-2	n/a	Quarrying continues in LHQ	n/a
Stage 1 This stage sees quarrying in the first line of fields in the extension area, divided into two sub stages 1a and 1b. Overburden will be placed in 'bunds' adjacent to the A38 and south west of Caton. Progressive restoration of the bunds and completed benches. Quarrying in the existing quarry is focussed on deepening to 28m AOD (Above Ordnance Datum).	Stage 1a years 2-10 Stage 1b years 10-13	Two 4 month campaigns in years 2 and 10	Quarrying continues in LHQ down to 28m AOD	In Years 2 to 13
Stage 2 In this stage quarrying is progressed to about half of the quarry extension area, in two sub stages 2a and 2b. The overburden is placed in the bund west of Caton. Progressive restoration of the bunds and completed benches. Quarrying in the existing quarry is focussed on deepening to 0m AOD.	Stage 2a years 14-15. Stage 2b years 16-31	Two 4 month campaigns in years 13 and 16	Quarrying continues in LHQ down to 0m AOD	In years 14 to 31
Stage 3 Quarrying progresses to the third line of fields in the quarry extension area. Completed benches are progressively restored. The overburden is backfilled into the base of the existing quarry.	Years 31-40	None	One 4 month campaign of back hauling overburden in year 31	In years 32 to 40
Stage 4 Quarrying extends across the remainder of the extension area. Completed benches are progressively restored. The overburden is backfilled into the base of the existing quarry.	Year 41-46	None	Three 4 month campaigns of back hauling overburden in years 40, 43 and 46	In years 41 to 46

Stage	Years from start of operations (approx.)	Bund building	Extraction in LHQ*	Extraction in Extension area
Stage 5 The quarry extension is progressively deepened until it is worked out to its full extent, with no increase in the quarrying footprint. The final extraction is below the plant area in the south east of the existing quarry. Completed benches are progressively restored.	Years 47-60+	None	Quarrying in years 47 to 60+, including removal of existing plant and recovery of limestone beneath existing plant area.	
Stage 6 Final restoration on completion of quarrying. The quarry void fills with water and restoration of lake edges is completed. The surrounding area is made available for amenity and nature conservation. Workshop area used for employment.	Progressive restoration of bunds and completed benches during stages 1-4, elsewhere on completion of stage 5		Quarry void fills with water and restoration of edges is completed. Area made available for amenity and employment uses.	
Note: Plus all currently permitted activities, including all processing and product manufacture, aggregate recycling and completion of the existing tip.				

The timeline for the extension is below, with the key on the next page

Table 2-1 Linhay Hill Quarry Extension proposals timeline

Year/Stage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
0	★	★															
1a																	
1b																	
2a																	
2b																	
3																	
4																	
5																	
6			p														

Year/Stage	17	18	19	20	to	31	32	to	40	41	42	43	44	45	46	to	60+
0																	
1a																	
1b																	
2a																	
2b																	
3																	
4																	
5																	
6	p																

Note: Years are counted from the start of operations and are based on current rate of extraction at Linhay Hill Quarry. Hence all timing is approximate.

Key		Construct replacement route for Alston Lane, diversion of public footpath and services, and other preliminary works.
		Bund Construction
		Backfilling in Linhay Hill Quarry
		Limestone Quarrying
		Progressive Restoration
		Final Restoration

Mitigating measures

2.10. The proposals incorporate a range of mitigating measures to reduce their impact on the environment and local people. The principal mitigation measure is the revised working scheme, whereby overburden from the later stages of the quarry extension will be backfilled into the deepened base of the existing quarry instead of being tipped on land adjacent to the extension, as described above.

2.11. Other key aspects of the mitigation strategy are:

- **The Landscape Strategy, and the Environmental Mitigation and Enhancement Strategy** which show:
 - new woodland and other planting, new hedgerows and where the existing hedgerows in the extension area will be translocated
 - how Way Lane and the new Alston access will be designed to resemble typical Devon lanes.
 - how the bunds and the higher benches of the quarry and extension will be progressively restored,
 - other habitat enhancement.

These Strategies are illustrated in the figures at the back of this NTS.

- **Hydrological Monitoring Strategy and Karst Management Plan** which have been developed to mitigate impacts on water interests and land stability.
- Flood attenuation basins and the extended quarry area will further help to reduce Ashburton's level of flood risk.

2.12. Other mitigation measures are proposed to address:

- Possible impacts of traffic diversions on Balland Lane by widening it, and on Caton Lane by improvements to the A38 off slip at Caton Cross and by a signing strategy,
- Noise levels associated with overburden stripping and building the bunds, and with quarrying at shallower levels nearest to neighbouring houses, by working practices, limiting working hours, building the outsides of the bunds first, natural and artificial noise shields, and general good operating practices.
- Control of dust during overburden stripping and building the bunds by good operating practices. The existing suite of dust controls in the quarry will be applied in the extension area as well.
- Removal of hedgerows by recording hedgerows as they are removed, and an Archaeological Watching Brief during overburden stripping. The minor impact on the setting of the Listed Buildings at Alston will be mitigated by planting a woodland buffer.
- The effects of diverting Ashburton Footpath 16, by creating new footpaths and other opportunities for public access.

Other Community Benefits

2.13. Glendinning agrees that there should be a S106 to accompany any planning permission. The S106 will include provision for the following:-

Community benefits

- Arrangements for provision of additional footpaths in stages 0, 1 and 3 and Creation of a public community garden or allotment space from the walled garden behind Place House – see Landscape Strategy Drawings in the NTS Figures.
- Restoration Strategy including creation of public space adjacent to the restored lake for amenity/wildlife and recreation including a circular path around the lake.
- Arrangements for long term maintenance and management of the restored site, including establishment of a Community Trust to oversee management the site, and contingency arrangements if a Community Trust is not set up.
- Preparation of a Masterplan of the land uses in the Restoration Strategy in the final part of Stage 5.

Other matters

- Traffic Regulation Order on Caton Lane for Signing Strategy.
- Commitment to seek further permissions and consents required under other legislation in orderly and timely manner, subject to outcome of the previous application.

3. Need and Alternatives

- 3.1. Need and alternatives are important considerations. Being in the National Park it is necessary to demonstrate why the extension is needed and to explore whether these needs can be met to an equivalent level by development elsewhere outside the National Park or in some other way.

Need

- 3.2. The 'needs' that will be met by the extension are:

- **The supply of aggregates and other construction products.** The quarry has sufficient reserves for it to operate viably for only a further 5 years from the end of 2020 at current rates of extraction. The quarry produces about a quarter of the limestone sold in Devon. Limestone comprises 90% of all aggregates sold in Devon. Linhay Hill Quarry limestone is recognised in the DNPA Design Guide as a source of indigenous material for construction projects in the National Park. The government places high importance on ensuring that there is a '*Steady and adequate supply of aggregates*' for the construction industry to provide the infrastructure and buildings that the country needs.
- **Direct employment, upstream and downstream contributions to the economy,** The quarry is the cornerstone of a local family business which provides 240 jobs, and with further knock-on benefits through spending on supplies to the quarry and use of the quarry products in development elsewhere and further spending by employees – the multiplier effect supports a further 180 indirect jobs making 420 jobs in total.
- **Competition:** The loss of production from Linhay Hill Quarry would jeopardise competitiveness in the aggregates market, with undesirable impacts on Devon's authorities and the construction industry, because the other three limestone quarries in Devon are all owned by the same global international company.
- **Use of natural resources.** If the extension does not go ahead the underlying limestone will be sterilised when the existing quarry is worked out and becomes flooded, because the cost of pumping out the flooded void and installing new processing plant will be prohibitive. The proposals allow extraction of additional limestone in the existing quarry as well as from the extension area.
- **Other local community benefits.** Glendinning is an active and constructive member of the local community, and supports many good causes locally. The proposals incorporate flood attenuation basins to reduce flood risk downstream in Ashburton, widening Balland Lane and the coach turning circle at SDCC to allow coaches to turn left as they leave the College instead of travelling back along the lower part of Balland Lane, and opportunities to extend public access in the surrounding area.

- 3.3. If the extension is refused, the quarry will only be able to operate at its current rate of production for a further 5 years from the end of 2020. Thus all this activity in the local economy would taper off and cease at some point in the future as the company would be forced to close down under the 'Do Nothing scenario'.

Alternatives

- 3.4. The ES looks in detail at alternative ways of developing the extension at Alston.
- 3.5. There is no scope to extend the quarry in any other direction, because of Ashburton to the south, the A38 to the east and there being no limestone under the land to the north.
- 3.6. Careful consideration has been given to the alternative ways of developing the extension itself, including close consultation with the nearest residents and the Town Council. As a result the proposals have been revised and are now believed to be the most preferable of the options available.
- 3.7. In considering alternative ways of developing the scheme the main variables are:
- The options for Alston Lane
 - The options for Alston Farm Access
 - The options for sequencing and location of bunding and overburden tipping
 - The options for control of traffic on Caton Lane
 - The options for restoration
- 3.8. The Environmental Statement examined the options that were considered in respect of each of these aspects of the scheme. The following is a summary of the main conclusions and reasons for the form of development being proposed in the application.

The options for Alston Lane

- 3.9. Alston Lane currently runs along the north-eastern boundary of Linhay Hill Quarry between the existing quarry and the proposed extension area. The Environmental Statement considered the implications of:
- A. Retaining the Alston Lane, and tunnelling under it.
 - B. Removing Alston Lane and not replacing it (do nothing) and
 - C. The different route options for replacing Alston Lane.
- 3.10. Retaining Alston Lane and building a tunnel through the supporting buttress would reduce the amount of limestone that the extension could yield by some 46%, cost approx. £2.5M and involve significant operational complications. This option therefore was discounted due to excessive cost and safety considerations.
- 3.11. If Alston Lane was removed and not replaced, journeys for local traffic (residents and businesses at Waye, Lower Waye and Alston) would be lengthened by between 1.3km and 5km depending on the direction of travel and route taken. Although these distances are not significant and there would have been obvious cost advantages to Glendinning in not replacing the removed section of Alston Lane, given the availability of possible alternative routes, the company chose to include a new route in the proposals.
- 3.12. Alternative routes for a replacement were variations on a new link between Alston Lane and Caton Lane. These options were rejected because of safety concerns associated with increased use of the non-standard junction with the A38 at Caton Cross, and the likely adverse effect of diverted traffic through Caton.
- 3.13. The preferred option was to create a new road linking Alston Lane with Balland Lane using to some degree an existing farm track, and the route of a public footpath. A variety of route alignments were investigated. The final route alignment, referred to as Waye Lane, was determined following consideration of the results of detailed environmental studies and consultations with local residents and businesses.
- 3.14. The decision to use Waye Lane was particularly welcomed by the Caton residents at the public exhibition in September 2015, and by Devon County Council and Highways England in ongoing consultations. The decision was also supported by the South Dartmoor Community College.

Options for Alston Farm Access

- 3.15. The existing access to Alston Farm and Alston Cottage passes through the middle of the quarry extension area. Of the three different routes that were considered, the preferred option was selected because of lesser impact on the landscape and on ecology, and greater distance from the quarry edge.
- 3.16. A further refinement of the selected route is to have an interim route and a permanent route where the replacement access passes Alston Cottage. The interim route avoids the garden of Alston Cottage to reduce the impact on the garden of the current occupants during Stages 1-3. The permanent route, which passes through the corner of the garden enables fuller access to the underlying limestone in Stage 4.
- 3.17. Other route options that were rejected would have involved either affecting the setting of the listed Alston Farmhouse, or would have had practical difficulties because of gradient, restricted space and surface water management.

Options for bunding and overburden tipping

- 3.18. The overburden is a basic clay material lying on top of the limestone. In addition clay occurs within the limestone and is referred to as 'quarry spoil'. Neither material has a market, so cannot be sold as a means of disposal off site. The cost of depositing the material in an inert landfill or similar facility elsewhere would be prohibitive and would involve multiple traffic movements and increased emissions, so off-site disposal was rejected.
- 3.19. The original proposals involved depositing all overburden, comprising 84% of total material to be disposed of, in bunds and a tip on land to the north of the extension area, with only the quarry spoil (16%) backfilled into the existing quarry. Variants to the sequencing of construction of these bunds and tip were considered in consultation with local residents.
- 3.20. Subsequently a revised proposal to deposit a greater proportion of the overburden in the existing quarry was explored and following careful consideration of the implications was adopted. The revised proposal was a radically different approach to the sequencing of extraction, with the major focus given to extraction in the existing quarry to reach the maximum practical depth of extraction, 0 m AOD, so that overburden from the later stages of the extension area can be disposed of in the base of the quarry.
- 3.21. Under this revised scheme only 48% of the overburden from the extension area needs to be placed in the bunds, a considerable reduction from the 84% in the initial proposals. As a result of these changes, the

footprint of the extension area has been reduced by some 12 ha, reducing the associated impacts on the surrounding area.

- 3.22. The sequence for constructing the remaining bunds is in line with the local residents' preferences as expressed during the earlier consultations.

The options for control of traffic on Caton Lane.

- 3.23. During preparation of the application, Caton residents raised concerns about the potential for traffic to use Caton Lane to reach the A38 following the closure of Alston junction. A consultation was undertaken presenting the following options:

- Option A – Prohibition of the right turn into Caton Lane from Hooks Cross;
- Option B – Signage strategy including Access Only signs on Caton Lane, introduced by a Traffic Regulation Order;
- Option C – Closure of the left-turn in to Caton Lane from the A38; and
- Option D – Full closure of Caton Cross removing all access between the A38 and Caton Lane.

- 3.24. Following consideration of the responses and consultation with the local highway authority, it was decided to adopt Option B, which is the Traffic Regulation Order and signing strategy.

- 3.25. The proposals therefore provide for 'Access Only' signs to be erected at both ends of Caton Lane. The route will be removed from journey planning software and satellite navigation systems. In addition signs for the A38 will be added to existing fingerposts along Stormsdown Road directing traffic to join the A38 at Drumbridges, via Goodstone Cross and Bickington. The signage strategy will be implemented via a statutory Traffic Regulation Order and put in place before Alston Lane is closed.

- 3.26. In response to concerns raised by Highways England, the applicants have also agreed to improve the slip lane off the A38 at Caton Cross. The improvements are outside the National Park boundary, so are the subject of a separate planning application submitted to Teignbridge District Council. The improvements were designed to minimise tree and undergrowth removal, whilst also meeting Highways England's road safety requirements and will be put in place before Alston Lane is closed.

Options for Restoration

- 3.27. Restoration has been considered under two headings; Progressive Restoration as the extension proposals progress through the various stages of the scheme, and Final Restoration.

Progressive Restoration

- 3.28. The main opportunities for progressive restoration are on the completed bunds and on the higher benches in the quarry extension area. A further opportunity was identified to alter the restoration of the existing tip.
- 3.29. The completed bunds will be restored with native woodland planting to maximise their screening effect and facilitate maintenance and other practicalities arising from their shape and gradients.
- 3.30. The higher benches in the extension area offer scope for creation of a variety of habitats and visual features to be introduced progressively as quarrying progresses through Stages 1-5.
- 3.31. The grass mixture in the progressive restoration scheme for the existing tip will be changed from Italian ryegrass to species rich grassland by management of the part that has already been restored and by altering the grass mixture for the remainder (totalling c. 10ha). Relocated hedgerows from the extension area will be used to replicate the historic field pattern as informed by historic maps. The rock feature in the previously approved restoration scheme will be omitted.

Final restoration

- 3.32. The options for final restoration are defined by the position that at the end of the working life of the quarry when dewatering ceases, the quarry void will fill to a level controlled by the adjacent hydrological features, anticipated to be c.96m AOD. Final restoration proposals mainly relate to the parts of the quarry which will not be flooded, namely the current weighbridge area, the capped Balland Pond, and the adjacent workshop area.
- 3.33. The strategy is to introduce informal recreation as the predominant use of the lake and its surroundings based on a public amenity area beside the lake with a circular path provided around it. Details will be decided nearer the end of operations as provided for in the Heads of Terms accompanying the application.

- 3.34. The existing workshop area and remainder of the unflooded area will be used for commercial uses to capitalise on the existing form of development and infrastructure and, importantly, offer scope for income to contribute to maintenance of the informal recreation provision in the remainder of the restored quarry.

Conclusion

- 3.35. Careful consideration has been given to the alternative ways of developing the extension, including close consultation with the nearest residents and the Town Council. As a result the proposals have been revised and are now believed to be the most preferable of the options available.
- 3.36. Hence the proposals are considered to represent the most suitable way to meet the ongoing need for limestone, including minimising environmental effects on local residents and businesses, the landscape, the natural environment and Devon's roads.

4. Effects on the Environment

Introduction

- 4.1. In line with industry best practice, a series of studies has been commissioned into the environmental aspects of the proposed quarry extension.
- 4.2. The findings have informed and shaped the proposals to ensure they minimise the impact on people, wildlife, the landscape and other environmental factors such as surface and ground water during the preparatory works and for the operation and future management of the extended quarry.
- 4.3. Glendinning is very mindful that this is particularly important as the site is inside the boundary of the Dartmoor National Park.
- 4.4. Therefore all aspects of the environment have been carefully addressed through both desk studies and site surveys before being further discussed during our extensive consultations with the local community and statutory authorities following the initial announcement of our proposals. The recommended mitigating measures have been incorporated into the proposals.
- 4.5. The following effects have been considered:-
 - **Landscape and Visual effects**
 - **Economy and Social effects**
 - **Ecology**
 - **Traffic and Access**
 - **Effects on water resources**
 - **Noise and Vibration**
 - **Dust**
 - **Cultural Heritage**
 - **Agricultural Land Value**
 - **Land Stability, Climatic Factors, Recreation, Air Safety and Sustainability.**

5. Landscape and Visual Effects

Introduction

- 5.1. The Landscape and Visual Impact Assessment (LVIA) has considered the landscape resource, character and visual amenity of the site and its surroundings to estimate the anticipated landscape and visual impact due to the proposals, both without and with mitigation. In addition to the advance planting which has already taken place alongside the A38, a range of robust and achievable mitigation measures have been identified to reduce the potential impact of quarry activities on potentially sensitive receptors. Many will be implemented in the initial stage of the proposals to provide early establishment in advance of operations occurring. Taking these mitigation measures into account, the assessment of cumulative impact has been based on the worst-case scenario periods of the construction, operation and restoration phases of the proposed extension in series through the stages and in combination with the existing Linhay Hill Quarry.

Baseline

- 5.2. The baseline was established via a Desk Study of relevant literature, most notably the National Character Area profiles available through the Natural England website, the Devon Landscape Character Assessment (2015) and the Dartmoor National Park Landscape Character Assessment (2010 and 2017). As the site is adjacent to National Park boundary, reference was also made to the Teignbridge Landscape Character Assessment. Other map based sources were also examined, along with aerial photographs.
- 5.3. Consideration of existing landscape character studies provided an independent view of the defining characteristics of the area. This was then followed by on site survey work to further refine the existing character area descriptions at the local level.
- 5.4. A Zone of Theoretical Visibility plan (ZTV) was prepared for the site in advance of a series of site visits. This used topographical data of the surrounding land to identify where the site may, in theory, be visible from within two radii, 2.5km and 12km. The ZTV assisted in defining the appropriate 'Study Areas' for the assessments, which was determined to be the extended quarry and its immediate setting as the Detailed Study Area, with a wider study area including some public access viewpoints on the higher moorland areas to the south west.
- 5.5. The DNPA Landscape Officer and Teignbridge Landscape Officer were consulted. Several local property owners were contacted to agree access to their property to take photographs and explain the outline scheme proposals. Several local residents agreed for site photographs to be captured from internal rooms within their property. Whilst this method is considered unusual in the recognised approach for a landscape and visual impact assessment, it was deemed appropriate in the context of the proposed scheme and particularly the sensitivity of the proposals.
- 5.6. A series of baseline photographs were taken during the site visits to illustrate the visibility of the proposals from multiple viewpoints following techniques recommended in relevant guidance to ensure compatibility between different viewpoints. In line with the Scoping Opinion, photomontages were made from selected viewpoints to show the likely changes during key stages of the proposals. The selected viewpoints are:
- Balland Lane,
 - Waye Lane, near Place House,
 - The A38,
 - Views from the south represented by Parkers Farm,
 - Views from the north, represented by Penpark.
- 5.7. Copies of these photomontages are included in the figures at the back of this NTS.

Landscape Assessment

- 5.8. The baseline assessment was used to inform an assessment of the landscape character and sensitivity or 'robustness'. The assessment of landscape sensitivity starts with considering the sensitivity of its character as a whole and then the individual elements in the landscape including such factors as their quality, value, contribution to landscape character and the degree to which a particular element or characteristic can be replaced or substituted.

- 5.9. The sensitivity of the landscape is based on the capacity of a landscape to accommodate change of the type proposed without harm to its character. The capacity of the landscape to accommodate change, and therefore its sensitivity, is not directly linked to the value of the landscape.
- 5.10. A subjective assessment of visual amenity was also made based upon the aesthetic, perceptual and experiential aspects of the landscape, such as complexity, diversity and tranquillity, as well as the emotions derived from viewing the site.
- 5.11. Based on the findings of the baseline assessment process the overall quality of the landscape would be rated as 'very good' on the basis of its strong landscape structure and balanced combination of built development, landform and land cover including woodlands, trees, hedgerows and shrubs.
- 5.12. In policy terms, nationally designated landscapes are ascribed a greater sensitivity than those of local designations, so in principle, being within the National Park, the Study Area is considered as having high sensitivity. However it should be noted that a criterion of high landscape sensitivity includes those landscapes which are categorised as being 'unlikely to contain or be influenced by existing features and elements similar to those associated with the proposed development'. In this case, the site is located adjacent to the active A38 dual carriageway which does not generally have a rural feel, being a busy dual carriageway route, thereby increasing its visual and audible impact on the surrounding landscape. The presence of the existing active quarry and other features such as the caravan site on the opposite side of the A38 also has an influence on the current landscape character.
- 5.13. Therefore whilst the **2.5km Study Area** in general is considered to be primarily of '**high**' sensitivity to the proposals, the **proposed extended quarry and its setting** is considered to be primarily of '**moderate**' sensitivity to the proposals.
- 5.14. As a result of the above, the LVIA concluded that the landscape of the Detailed Study Area may be able to largely accommodate change of the type proposed without a large significant detrimental effect on the overall character and landscape resource.
- 5.15. The restoration stage was also assessed and found to have slight beneficial effects in the long term, although the eventual completion of the quarrying activities and inherent nature of the development would potentially result in slight adverse effects on the baseline landscape character and elements of the development site.

Visual Assessment

- 5.16. The visual amenity of the areas surrounding the proposed extended quarry from which views of the site were available were ranked according to their 'visual amenity value'.
- 5.17. This ranged from the '**poor**' visual amenity value of the parts of Ashburton immediately to the west of the existing quarry, which includes the existing quarry site, South Dartmoor College, Ashburton Business Park and suburban housing areas, to the '**exceptional**' amenity value of the upper moorland areas of Dartmoor such as at Ryder's Hill, Snowdon and Pupers Hill from which the site is visible, but from a great distance.
- 5.18. The next highest visual amenity viewpoints were judged to be the areas immediately to the north and east of the proposed extended quarry considered to have '**good**' visual amenity value due to the presence of some characteristic features including; the woodland blocks and rolling landform. The proposed extension site itself is judged as having a '**good**' visual amenity value, primarily due to the presence of distinctive features such as the regular field pattern and wide hedgerows. The urban fringe parts of Ashburton and area immediately south of the proposed extended quarry is judged as having a '**moderate**' visual amenity value owing to the characteristic features such as the field pattern and hedgerows being combined with the presence of detracting built features, including the Linhay Business Park, the active A38 dual carriageway and the caravan site.
- 5.19. The potential visual effects of the construction and operation phases of each of the various elements of the proposals were then assessed systematically through all the stages and ranked taking account of the above baseline factors and the nature of the resulting change. The assessment was based on the worst case scenarios for each stage by reference to the relevant guidance criteria.
- 5.20. The resulting rankings were moderated by applying the following landscape mitigation measures:
 - Avoidance – the revised proposals having a smaller footprint than the original proposals,
 - The temporary nature of the construction phases, typically lasting 4 months, and their graduated staged progression across the site,
 - Relocation of hedges and their placement elsewhere, including to reinstate historic field patterns,
 - Constructing the outer sides of the bunds first to screen works to build the inner sides,

- Retention and protection of existing vegetation,
 - New planting comprising hedgerows with intermittent trees to form new field boundaries off site, woodland blocks to the new bunds and peripheral areas on the edge of the extension site,
 - Design of the new road elements to resemble traditional Devon hedgerows,
 - Introduction of surface water ditches and ponds,
 - Creation of new footpaths in the surrounding area.
- 5.21. For the very closest properties, those at Alston, the effects of Stages 2 onwards are anticipated to be of large adverse significance, with stages 3 onwards being of moderate adverse significance for Alston Farmhouse once mitigation woodland planting becomes established. Effects of Stages 3 onwards for Alston Cottage are assessed as large adverse. Elsewhere for those properties with the most direct views of the extended quarry from higher ground there will be moderate adverse visual effects at many stages. The remaining properties were anticipated to experience slight or neutral adverse effects. For nearly all receptors, the overall adverse visual effects of the stage 1-5 proposals are significantly reduced by the extension being progressed in a series of stages, with intervals between each construction stage which will allow alterations to the landscape to settle.
- 5.22. At the restoration stage, the significance of visual effects on all receptors who experienced an adverse effect during operation will be reversed to moderate beneficial, and an additional receptor will be introduced: recreation visitors to the restored quarry.

6. Economic and Social Effects

Introduction

- 6.1. The economic and social effects of the proposals have been reviewed in the ES. The study area for the socio-economic assessment consists of local authorities in South Devon. South Devon is defined as including the following:
- Teignbridge District Council;
 - South Hams District Council;
 - West Devon District Council;
 - Plymouth City Council;
 - Exeter City Council, and;
 - Torbay Council.
- 6.2. The impact assessment focuses on the number of jobs expected to be created or safeguarded – directly, indirectly and induced. The impact assessment is undertaken in the context of the Study Area’s baseline conditions and anticipated future changes and the current role of Glendinning in the local economy.
- 6.3. The assessment then considers the net employment impacts based on relevant guidance. Reference is made to concepts of ‘deadweight’ (or the ‘do nothing’ scenario), leakage, displacement and the multiplier effect. The Study Area context includes current and anticipated future age profile of the local population, levels of education and skills, levels of economic activity and the employment profile. Particular focus is directed to mining and construction sectors and to tourism.

Baseline

- 6.4. The analysis of baseline socio-economic conditions indicates that the study area at present has a high rate of economic activity among the working age population. The workforce in the study area is relatively less qualified than the regional and national average.
- 6.5. The Dartmoor and Exmoor Economic Prospectus (2015) highlights the importance of economic drivers in the National Park. Valuing England’s National Parks’ published in 2013 by National Parks England demonstrates that E&JW Glendinning operations at Linhay Hill Quarry are a significant element of the DNPA local economy, constituting 5.8% of the turnover of Dartmoor’s economy.
- 6.6. In terms of public finances, the Company contributes more than £250,000 in Local Business Rates each year, and more than £8.5 million to Central Government.
- 6.7. Linhay Hill Quarry represents the bulk of the Company’s extraction and a large part of its manufacturing operations. Of the total 240 employees, 136 are based in Ashburton, either at the quarry, or at the headquarters, Glentor. The remainder are based at the Company’s other sites, which are all closely associated with products from Linhay Hill Quarry and largely depend on those products for their operations. A further 3 jobs are supported in the local economy for each 4 jobs provided by Glendinning (indirect employment).
- 6.7a Linhay Hill Quarry is one of four strategic limestone quarries in Devon; the others are Moorcroft, near Plymouth, Stoneycombe, near Kingskerswell, and Westleigh – near Burlescombe in West Devon, close to the Somerset boundary.
- 6.7b The extension area lies within an area identified as being underlain by limestone on the Devon Mineral Resources Map produced by the BGS for the Office of the Deputy Prime Minister (now the DCLG). The quality of the limestone has been proved by drilling. This area is designated as a Minerals Safeguarding Area in the adopted Devon Minerals Plan and the adopted Dartmoor Minerals Plan.

Assessment

- 6.8. The proposed development will directly create an additional 10 jobs during an assumed ten year construction period, leading to a further 8 indirect jobs. Thus the construction phase will lead to an impact of 16 jobs in the study area by 2035 and 18 in total.
- 6.9. In the operation phase, 240 jobs will be safeguarded, with a further 180 indirect jobs safeguarded. Overall 378 jobs will be safeguarded in the study area by 2035 and 420 in total. These are sustainable long term permanent jobs.
- 6.10. Adverse effects on Alston Farm and Fine Turf are anticipated to be small. The land loss is not critical to these businesses. There is good and direct communication between Glendinning and both these businesses. There may be some localised inconvenience for nearby Caravan Parks and B&Bs but this is

not likely to threaten their existence. Therefore on balance the Proposed Development is considered to have negligible long term effect on local businesses, including tourism.

- 6.11. By contrast, adverse impacts of the 'Do Nothing scenario' are estimated to be potentially significant to local businesses and the local economy. In the financial year to 2015 the company spent some £6M with suppliers with Devon postcodes, which would taper off and cease at some point in the future as the company would be forced to close down under the 'Do Nothing scenario'.
- 6.12. The sensitivity of receptors, which in this case would be local workers, is high as jobs are critical to their livelihoods, travel distances to alternative work are relatively further and jobs opportunities relatively fewer than in urban areas. In the context of the local rural economy 378 jobs represents a significant number. In relation to the mining sector the significance of 378 jobs is higher, at almost 20% of the sector.
- 6.13. In terms of the local economy, a company contributing £6 million annually to Devon's local economy and comprising 5.8% of the turnover of businesses within Dartmoor's economy is also regarded as significant.
- 6.13a The three other major limestone quarries in Devon are all operated by the same global international company. Therefore, Linhay Hill Quarry performs an important role in maintaining competition in the market, and without this source, the remaining operator would have a local monopoly of supply. This consideration is exacerbated by Devon's geographical location on a peninsula.
- 6.13b The extension of Linhay Hill Quarry represents the only opportunity to extract the limestone in the extension area. This is because once working stops at Linhay Hill Quarry, the plant will all be removed and de-watering will stop so the void will fill with water. It will then be too costly to reopen the flooded quarry to extract the limestone in the proposed extension area at a point in the future, because the cost of reinstalling plant and other infrastructure, and of de-watering the whole void from its filled state would be disproportionate and therefore prohibitive.
- 6.14. Mitigation is not relevant as there are no adverse effects.
- 6.15. In conclusion, the Proposals will generate moderate beneficial effects for the local economy and will safeguard 378 jobs locally and 420 in total. In addition, 16 new jobs in the study area will be guaranteed during the construction phase for ten years. Linhay Hill Quarry is an important element of the local rural economy through its employment, supply chain linkages and supply of sustainable construction materials. The company provides substantial revenues to the Treasury and Local Authorities. Preserving its future will be important in maintaining local economic resilience and distinctiveness.

7. Effects on Ecology

Introduction

- 7.1. The effects on Ecology have been assessed in the ES in relation to both the construction phase and the operation phase. The assessment takes account of the comprehensive Ecological Mitigation and Enhancement Strategy illustrated in the figures at the end of the NTS. The findings are summarised as follows:

Construction

- 7.2. The proposals are predicted to result in no significant adverse effects to designated sites during the construction phases.
- 7.3. Construction activities will result in direct permanent impacts to habitats under the footprints of the new roads, quarry extraction and overburden bund footprints. Along the new roads and tracks, these impacts are relatively small scale and predominantly are in the form of minor reductions in size of larger habitat areas rather than loss of complete habitat units. Within the Extension Area, habitats lost are predominantly of low ecological importance, with the exception of the hedgerow network, and relatively small areas of plantation woodland and 'good' semi-improved grassland.
- 7.4. Translocation of all impacted hedgerows, together with substantial new hedgerow creation is considered to result in no residual significant effect on this habitat type. The extensive habitat creation proposals overall are considered to provide net gains as habitats of greater ecological importance are provided to replace those lost.
- 7.5. Mitigation through avoidance has been employed throughout the development of the proposals; however some localised, short-term and temporary adverse effects arising from construction are inevitable. The proposals seek to minimise the likelihood and significance of these through careful control of construction activities through an industry best practice CEMP. In addition, a staged approach to habitat creation is integral to the proposals, with the aim of, as far as possible, providing mitigation and enhancement habitats in advance of adverse construction effects occurring. Overall, no significant adverse effects to important habitats are predicted. Significant beneficial effects at the Local (District) scale are predicted for woodlands, and at the Local scale for species-rich grasslands, running water and open water.
- 7.6. The scale and nature of mitigation provided is predicted to result in no overall significant adverse effects to important species. Significant benefits at the County scale are predicted for dormice, on account of the area and connectivity of woodland and hedgerow habitat creation proposed. Effects on reptiles are predicted to be beneficial at the Local scale. In the case of the bird and invertebrate assemblages there will likely be changes to the assemblage composition resulting from a reduction in area of open grassland habitats and increase in woodland / woodland edge habitats; however effects to these groups are still considered beneficial at the Local (District) scale overall. No significant effects (adverse or beneficial) are predicted to roosting or foraging / commuting bats.

Operation & Progressive Restoration

- 7.7. No significant operational effects are predicted to arise from the new roads (Waye Lane Replacement route and Alston Farm access), principally due to the very low levels of anticipated vehicle movements, particularly at night-time.
- 7.8. No significant operational effects are predicted to arise from noise or dust from quarrying activities due to the suppression and control measures that would be applied.
- 7.9. The mosaic of habitats that would be delivered as a part of the progressive restoration of the quarry have potential to deliver significant ecological benefits for a range of important species, including those already present within the site and immediate surrounds and also to others that might be attracted to the new habitats provided.
- 7.10. In terms of habitats, significant gains are predicted for broadleaved woodlands, species-rich grassland and other open habitats. The combined scale and diversity of these habitats is considered to be significant at the County scale.
- 7.11. Gains for fauna are also significant: the habitats and habitat features of the progressive restoration proposals are considered to have good potential to support populations and assemblages of bats (foraging and roosting) and flora of County importance, breeding birds and invertebrates of Local (District) importance, and be of Local importance for badger, dormice and reptiles.

Final Restoration

- 7.12. In terms of habitats, significant gains are predicted for open water and associated marginal and reed-bed habitats. The combined scale and diversity of these habitats is considered to have good potential to be significant at the County scale.
- 7.13. Gains for species are also considered significant: the habitats and habitat features of the final restoration proposals are considered to have good potential to support populations and assemblages of bats (foraging / commuting) and breeding birds of County importance, invertebrates of Local (District) importance, and be of Local importance for badgers and amphibians.

8. Effects on Traffic and Access

Introduction

- 8.1. The potential transport and access implications of the proposed quarry extension arise from the following changes to the highway network:
- Closure of the eastern part of Alston Lane and the junction with the A38 (Alston Cross);
 - Construction of a replacement road (the 'Waye Lane' link) and diversion of public footpath Ashburton 16;
 - Widening of Balland Lane (as mitigation); and
 - A signage strategy for Caton Lane and improvements to Caton Cross (as mitigation).
- 8.2. The effects of these changes have been assessed in consultation with Highways England, and Devon County Council as Highway Authority. Road Safety Audits (RSAs) have been undertaken of new and altered junctions and lengths of road, and the results incorporated into the designs.

Existing Situation

- 8.3. Linhay Hill Quarry's location, close to a four way junction on the A38, mid-way between Exeter and Plymouth, and close to the A class road link to Newton Abbot, means the quarry has a high level of accessibility to Devon's major markets and growth areas. It is likely that if Linhay Hill Quarry is not extended and stops operating, it will be necessary to supplement limestone from the other three limestone quarries in the county with limestone from other quarries outside Devon. Because of the extra distances involved, this could result in at least a doubling of emissions depending on the amount of limestone that has to be brought in from outside Devon.
- 8.4. A detailed review of the existing highway network in the vicinity of the site has been undertaken, including function and levels of use of each route, junctions, traffic speeds, and accidents. Rights of way, including footpaths and cycleways are described, and public transport provision.

Impacts and mitigation of Alston Lane closure and replacement Waye Lane

- 8.5. No adverse impacts are anticipated in connection with the closure of the eastern part of Alston Lane and the junction with the A38 (Alston Cross). Traffic originating in or destined for Alston Lane is expected to use the new Waye Lane link instead, whilst 'through traffic' travelling from the A38 is anticipated to divert along Stormsdown Lane which is 30 seconds quicker than using Caton Lane. Some through traffic that uses Alston Lane to reach the A38 may use Caton Lane following the closure, although the old A38 through Bickington to Drumbridges Roundabout is a better quality route and is expected to be more preferable despite having a slightly longer journey time. The RSA considered that any change in the level of risk for users of Caton Lane would be negligible. However a signing strategy and Traffic Regulation Order is proposed to meet concerns expressed by Caton residents about additional traffic, which will restrict Caton Lane for 'Access Only'. In addition, improvements to the slip road at Caton Cross will be undertaken.
- 8.6. The proposed Waye Lane link will provide a connection between Balland Lane and Alston Lane. To the south west it will connect with Balland Lane as the minor arm of a priority junction. At the north-eastern end the route will lead onto Alston Lane and continue southwards to Lower Waye. The road width will be as a standard 3.25m, with 6.25m passing bays at suitable intervals to allow for two lorries or tractors to pass. The overall design will be informal to make the new road resemble a typical Devon Lane.
- 8.7. A total of 130 vehicles (two-way) are expected to use the new Waye Lane link on an average day, 137 on an average weekday, equating to less than one vehicle every 7 ½ minutes. The new link will be similar in character to Alston Lane, i.e. a single lane with passing places. Department for Transport guidance states that a two-way flow of up to 300 vehicles per hour is acceptable for a single lane with passing places. The level of traffic that is predicted to use the new link road is therefore well within this capacity threshold.

Impact and mitigation on Balland Lane

- 8.8. The diversion analysis suggests that vehicles travelling via the new Waye Lane link will use either the eastern or western part of Balland Lane depending on their direction of travel resulting in slight increases on all parts of Balland Lane.
- 8.9. The slight dis-benefit associated with this increase is exacerbated by the following characteristics of the highway network in this area:

- The eastern part of Balland Lane is narrow, with limited passing bays, limited forward visibility at either end and bends that are not negotiable by buses or coaches;
 - School buses are unable to depart via the eastern part of Balland Lane. As a consequence a turning circle is provided at the school entrance and buses depart along the western part of Balland Lane. It is understood that congestion can result from this arrangement around the start and finish to the school day.
- 8.10. To mitigate the impact of the Waye Lane traffic on the eastern part of Balland Lane, the single lane length should be improved by providing at least two passing places to allow cars to pass each other. However, this would not provide mitigation to the western part of Balland Lane, therefore additional measures are proposed. With the support of Ashburton Town Council, South Dartmoor Community College, and Dartmoor National Park Authority, the proposal is to upgrade this mitigation to widen the entire length of the single lane part of Balland Lane from its junction with Place Lane, just beyond the College, to the lower access to the quarry.
- 8.11. This part of Balland Lane will be widened to 4.8m with 0.5m verges though with locally narrower points where required to reduce tree loss. This will make Balland Lane wide enough for HGVs and coaches to pass cars and bicycles.
- 8.12. This upgrade will allow coaches dropping off or collecting pupils at SDCC to continue north-eastwards, rather than turning back south-westwards along the lower part of Balland Lane, where they have to pass all other traffic at either end of the school day. This will help to mitigate the impact of additional traffic from Waye Lane on the western part of Balland Lane by relieving busy traffic conditions at either end of the school day.
- 8.13. The mitigation proposals also incorporate a small alteration to the turning circle for coaches at the entrance to SDCC, allowing coaches to turn right as they leave the turning circle.

Impact on Journey Times

- 8.14. The highway proposals will have a mixed impact on journey times for existing drivers that currently use the eastern part of Alston Lane, which will depend on the origin and destination of each journey. The change in journey times for through traffic that currently turns left into Alston Lane is expected to be negligible, whilst the change in journey times for those travelling to destinations in Alston Lane will be variable. There will be a significant reduction associated with travel between Alston Lane and Ashburton, whilst there will be increases for local and through traffic that currently uses Alston Lane heading for the A38 east.

Impact on Active Travel and Public Transport

- 8.15. The largest estimated diversion of traffic onto any one link in the area amounts to an average of less than five additional vehicles per hour. The traffic diversion associated with Alston Lane is therefore unlikely to have any discernible impact on delay or amenity for pedestrians, cyclists or equestrian users in the local area.
- 8.16. Ashburton Footpath 16 will be subject to a minor diversion as part of the development proposals. The replacement route will be of the same standard as existing, running alongside Waye Lane, from which it will be separated by a hedgerow. Pedestrians will need to cross Waye Lane at one location, however as the level of traffic expected to use the route is low it is unlikely that they will experience delay as a result.
- 8.17. The closure of the eastern section of Alston Lane will remove a section of public highway that can currently be used by pedestrians, cyclists and equestrian users to access the A38 and the Plymouth – Exeter cycleway. However, a 24-hour survey recorded just one cyclist using this section of Alston Lane and no pedestrians or equestrian users.
- 8.18. The proposed Waye Lane link will provide a new route that can be used by cyclists and equestrian users to travel to Ashburton, which provides access to the Plymouth – Exeter cycleway to the west. Access to the cycleway to the east can be achieved via Stormsdown Lane.
- 8.19. The Plymouth – Exeter cycleway is considered to be the busiest cycle route in the vicinity of Linhay Hill Quarry. As a consequence, the removal of the Alston Cross junction, which currently bisects the route, is likely to provide a small benefit to a relatively large number of cyclists.
- 8.20. The proposal to close the eastern part of Alston Lane will not impact on any operational bus routes. The resulting diversion of traffic is expected to be low and will have no discernible impact on scheduled bus services. However an existing issue associated with congestion caused by the need for school buses to arrive and depart SDCC from the same direction may be exacerbated by the diversion. As a

consequence mitigation measures are proposed that will allow school buses to depart to the east, which they cannot currently do. This represents an important improvement.

Construction Impacts

- 8.21. The construction impacts of the scheme will be limited to the works for construction of Waye Lane link, widening of Balland Lane, alterations to the school bus turning circle and improvements to the slip road at Caton Cross and closure of Alston Lane as the extension of the quarry represents both the operational and construction phases of the development. Approximately 10 additional members of staff will be located at the quarry during the highway construction period, which is expected to take place over a period of about 1-2 years, and for the hedgerow relocation and overburden stripping taking place as quarrying progresses across the extension area.
- 8.22. Significant elements of the construction activities will take place offline and so will have no impact on existing highway users. In addition much of the construction activities will be directly accessible from the site compound without the need to use the public highway. At some locations it is likely that Temporary Traffic Regulation Orders will be required that may introduce short-term closures and diversions for widening of Balland Lane, which are planned to take place during school holidays, and for the improvements to Caton Cross and the closure of Alston Cross.

Conclusion

- 8.23. The assessments undertaken demonstrate that the development proposal will not have any significant adverse environmental impacts in highway terms and should be considered acceptable in terms of highway planning policy.

9. Effect on Water Resources

Introduction

- 9.1. The likely significant effects of the proposed quarry extension and associated necessary infrastructure on the water environment including surface water and groundwater flows, water quality, and flood risk are assessed in the ES. The assessment is based on Hydrogeological Impact Assessments produced in 2016 and 2018 now largely superseded by a HIA produced in 2020, and a Flood Risk Assessment, submitted with the application.

Baseline

- 9.2. The existing Linhay Hill Quarry and extension area span the catchments of i) the Balland Stream which eventually flows into the River Ashburn and then the River Dart, and ii) the Kester Brook which eventually joins the River Lemon. The Environment Agency's South Devon Water Framework Directive Management Area Abstraction Licensing Strategy indicates there is 'water available' all year round in the River Lemon catchment, and during autumn, winter and spring in the River Ashburn catchment.
- 9.3. The quarry is working an outcrop of the Chercombe Bridge Limestone Formation (CBLF) which is classified as a Principal Aquifer, whereas the surrounding strata are Secondary A aquifers. There are no groundwater source protection zone within four kilometres of the proposed quarry extension. The outcrop of the limestone covers an area of more than 300 hectares extending from Ashburton to Bickington and has been subject to geological weathering (dissolution) processes, forming a variety of karst features. Several sub-vertical karst features are exposed in the quarry, particularly on the south east side of the quarry above the Level 4 bench. Groundwater inflow to the quarry from those exposed karst features has not been observed, and the features are infilled with brown clay sediment which suggests they ceased to be important for groundwater flow before they were exposed by the quarry.
- 9.4. To the north west is the less permeable Tavy Formation overlain by the St Mellion Formation / Crackington Formation (sandstones, siltstones, mudstones) further north west. The Tavy Formation forms the north west boundary to the limestone almost to Caton Lane where the geological maps show a fault north north-west to south south-east, east of which the boundary is formed by the Crackington Formation.
- 9.5. The limestone extends south west under Ashburton and north east under Alston, Caton, Goodstone, and beyond to Bickington. South east of the existing Linhay Hill Quarry and from the quarry to Caton, the limestone underlies the land south of the A38 for approximately 300-450metres from the A38, with the Foxley Tuff Formation and then the Gurrington Slate Formation to the south of the limestone. The Foxley Tuff Formation also surrounds the south west extent of the limestone west of the where it underlies Ashburton.
- 9.6. Thrust faults are located between the Tavy Formation and CBLF, and the Foxley Tuff and the CBLF, and groundwater may be flowing across the faults to the limestone, but the evidence is that groundwater flow from the Tavy Formation to the limestone is limited.
- 9.7. The CBLF is a buried karst, with conduits that would normally allow rapid transmission of groundwater filled with low permeability clay material. The relatively low hydraulic conductivity of the CBLF relative to other carbonate aquifers reflects the influence of this clayey infill. Karst features, including around 20 caves and 10 springs that discharge from the CBLF, have been mapped from Buckfastleigh to Bickington. The majority of these features are located at the downstream edges of the CBLF outcrop, away from the quarry.
- 9.8. Dewatering leads to a steep cone of depression within the quarry, with drawdown of around 60 m at the quarry sump. Despite ongoing dewatering from the quarry sump, relatively shallow groundwater levels are apparent near the Balland Pit (as evidenced by seasonal inflows to this feature in the water balance and water levels in nearby boreholes), along much of the southeast face (as evidenced by groundwater flooding in this area and artesian conditions in borehole in the south east of the quarry Level 4) and within a fracture feature in the northeast face. Drawdown of less than 10 m is apparent at the quarry boundaries.
- 9.9. Inflows to the quarry are subject to substantial seasonal variations, with 80% of all groundwater inflows occurring from October to March and only 8% of groundwater inflows occurring between June and September. The dramatic reduction in dewatering rates during summer, when groundwater levels are at their lowest, demonstrates that the majority of groundwater flow outside the quarry occurs in permeable features (i.e. channels, conduits and fractures) within the shallow parts of the CBLF. These permeable features require seasonal recharge to sustain flow within them and their flow is greatly reduced during summer. This reduction in permeability with depth is characteristic of many karst systems.

- 9.10. Deeper conduits within the quarry transmit groundwater during winter, but the reduction in flow from these features during summer demonstrates that these features are not well-connected hydraulically to the rest of the CBLF and rely on seasonal recharge to sustain flow within them. Local recharge within the footprint of the quarry accounts for the majority of groundwater flowing to both the sump and the Balland Pit, while less than a third of groundwater inflows to these features comes from beyond the quarry boundary, predominantly via shallow fractures and conduits, which dry out in summer.

Proposals and mitigation

- 9.11. The quarry extension proposals will require new drainage features to be formed around the altered terrain to manage the water and flood risk in the locality. The Alston stream will be diverted around the overburden bunds, and an existing sinkhole on its current route will be filled.
- 9.12. The extension and deepening proposal will gradually extend the area of drawdown to the north east and into the catchment of the Kester Brook / River Lemon as the extension progresses.
- 9.13. A range of potential receptors has been considered, and the following sensitive sites have been identified:
- the Balland Stream to the north of the quarry,
 - and the Goodstone springs, the Kester Brook, and a private water supply borehole in the groundwater catchment of the Kester Brook / River Lemon.
- 9.14. Mitigation measures include continued maintenance of water levels in the Balland Pit which mitigates groundwater drawdown, primarily to the southwest, while discharge from the quarry mitigates effects on flows in the Balland Stream.
- 9.15. To the northeast of the extension, a balancing pond will be constructed designed to maintain groundwater levels in the groundwater catchment of the Kester Brook / River Lemon within their normal range. Controlled flow from the Alston stream will also be diverted to infiltrate within an unlined ditch east of the proposed overburden bunds, to assist in maintaining groundwater levels and the groundwater divide between the Balland Stream and Kester Brook catchments.
- 9.16. A series of monitoring locations has been defined to promptly identify potential impacts beyond the projected maximum extent of drawdown. A comprehensive programme of monitoring and reporting has been devised to assess the effectiveness of the mitigation measures before commencement of each stage of the proposed development, comprising comparisons of impacts against agreed trigger levels and periodic reviews of the monitoring and mitigation plan in consultation with the Mineral Planning Authority and the Environment Agency.
- 9.17. If key data sets exceed trigger levels, an update to the adaptive monitoring and mitigation programme would be undertaken, which would be subject to agreement by the Mineral Planning Authority. In addition, arrangements for providing compensation flows to the Kester Brook, enhancement of the infiltration function of the balancing pond, and the unlined section of the diverted Alston stream, and options to address potential impacts on the private water supply are set out as contingency measures, the need for which will be considered in the periodic reviews including annual summary reporting of data in the monitoring locations.

Flood risk and surface water

- 9.18. The existing quarry has in effect created a water storage area, because it catches and stores the water from rainfall that falls on it, rather than the rainfall water running off the surface as happens elsewhere. This water (and inflowing groundwater) are discharged from the quarry by pumping, regulated by a discharge permit from the Environment Agency. The water is pumped into the Balland Stream, which flows down through Ashburton. As the rate of pumping is controlled, the water storage helps to reduce flood risk from the Balland Stream in Ashburton.
- 9.19. While the extension to the quarry proceeds, the increase in operational area will mean that the quarry void captures more rainwater and the extended area will also intercept surface water flow routes within the upper catchment of the Kester Brook. However as all water intercepted will continue to be discharged by controlled pumping, the water storage role of the quarry will continue and also provide some flood risk mitigation to the Kester Brook.
- 9.20. Additionally new drainage routes will be formed around the overburden bunds enclosing the extension, and the new Waye Lane route will cross watercourses of the Balland Stream and its surface dressing could lead to slightly increased runoff to the Balland Stream. So the proposals have sought to include measures to mitigate that slight increase in runoff. Attenuation storage will be provided by a series of small basins formed along the upper catchment of the Balland Stream in which water can flood temporarily. These will further mitigate flood risk in Ashburton.

Restoration

- 9.21. As is the case for the existing quarry, once rock extraction ceases and dewatering stops the void will fill with water from rainfall and groundwater and to form a lake. The lake level will be controlled to discharge to the Balland Stream and provide ongoing flood risk attenuation to Ashburton. Based on the envisaged water level in the post-restoration void groundwater inflows to the quarry are likely to be significantly reduced following restoration, leading to a much lower likelihood of effects to the nearby groundwater and surface water system.

Conclusion

- 9.22. Overall no significant effect due to the quarry operational dewatering is anticipated because:
- Local springs and abstractions to the north are recharged from higher land to the north and are not within the projected extent of the quarry drawdown.
 - The water which flows into the quarry will continue to be pumped to the Balland Stream. In addition, water will be pumped to a balancing pond and unlined ditch to maintain the groundwater divide and groundwater levels at the eastern extent of the projected maximum groundwater drawdown area.
 - The water from north east of Alston Farm and the bunds for overburden will continue to flow within the Kester Brook catchment.
 - The water discharge from the combined Balland Stream and Kester Brook catchments is not expected to be materially affected.
 - A comprehensive programme of monitoring and reporting has been devised to assess the effectiveness of the mitigation measures throughout the period of the proposed development
 - Contingency mitigation is proposed in the event that continued monitoring identifies potential impacts on a sensitive site or beyond the projected maximum extent of drawdown.
 - Restoration will be to open water as is the case for the existing quarry void, and when the lake discharge control structure is agreed with the flood authorities it is envisaged that will also aim to ensure the long term effect on groundwater flows to the Kester Brook are minimal.
- 9.23. Flood risk downstream will be moderated by:
- the quarry void continuing to act as a water storage area and the extension expanding that role; and
 - new detention basins providing additional attenuation along Waye Lane within the upper catchment of the Balland Stream.

10. Noise and Vibration

Introduction

- 10.1. The effects of proposals on noise and vibration have been assessed in the ES in accordance with relevant guidance (PPG30). The baseline noise environment has been established by a series of long and short term surveys, designed to enable a good coverage of likely potential receptors and a baseline for assessing the relative effects of different aspects of the proposal. Reference has been made to the noise conditions on current planning permissions for the quarry operations.

Baseline

- 10.2. The A38 is a dominant source of noise in the vicinity of the site, although the influence varies with distance and intervening topography. Other existing noise sources include operations at the current Linhay Hill Quarry, farming activities, activities at South Dartmoor Community College's sites and residential properties, occasional aircraft, birdsong and animal sounds. The quarry operates in accordance with conditions on current planning permissions.

Construction

- 10.3. Future noise associated with construction of various elements of the proposals has been calculated using specialist computer modelling and assessed by comparison to the limits provided in the guidance and background levels.
- 10.4. The noisiest construction activities will be overburden stripping and bund construction in stages 1 and 2, principally affecting the nearest residents at Lower Waye and Momalda, Alston Farm and Cottage and Caton. Overburden stripping and bund building will be done in a series of campaigns each lasting approximately 4 months to optimise plant and management time. The campaigns will take place in years 2, 10, 13 and 16 from the start of operations. The works will be organised to concentrate the noisiest part of these campaigns within the 8 week period provided in the guidance for noisy works. Mitigation includes limited working hours, prior placement of new or relocated hedgerows, construction of the outer edges of the bunds first and temporary bunding of stripping locations. Standard Good Practice will be followed throughout. In addition on-site monitoring will be undertaken as required.
- 10.5. Construction activities in stages 3 and 4 will be less noisy for most receptors, because surface works will only involve overburden stripping, no further bund building will be done. The overburden will be backfilled into the base of the existing part of the quarry. Mitigation equivalent to that in stage 1 and 2 will be employed.
- 10.6. The construction works for Waye Lane, Balland Lane and Alston Farm access will be relatively short lived and less noisy. Limited working hours and Good Practice will be followed, and impact on the school will be reduced by working during the school holidays where possible.

Operations

- 10.7. Calculations have also been made of noise associated with different aspects of future operations. The cumulative effects of construction noise combined with operational noise has been accounted for as has the cumulative effect of the existing quarry operating for longer as a result of the extension and alongside the extension. Potential noise from the proposed restoration has also been considered.
- 10.8. Most of the operational noise at both the proposed extension and existing quarry will be generated by excavating plant, limestone-moving plant and other heavy on-site traffic associated with the mineral extraction. The noisiest activity will be blast hole drilling during the shallowest parts of quarrying in each stage for the closest receptors. Different receptors will be affected in different stages. Drilling typically takes place on 7 to 10 days every month and lasts for between 5 and 7½ hours. Noise from the drilling will be mitigated by temporary bunds and moveable acoustic barriers. As the quarrying deepens, noise levels will reduce because they will be screened by the sides on the quarry. Noise from drilling of the shallow benches will be monitored and, if necessary, working hours limited and/or the intensity adjusted to ensure noise levels remain within appropriate limits when closest to nearby receptors.
- 10.9. Blasting itself is limited by conditions on the current planning permissions and all blasts are within these limits. Future blasting in the extension area is anticipated to be capable of being undertaken within a lower limit of 8.5 ppv/s (peak particle velocity/second).
- 10.10. On-going monitoring, in combination with the identified physical and working practice mitigation measures will ensure that the potential impact upon the potentially noise sensitive receptors and the wider Dartmoor National Park are minimised.

Conclusion

- 10.11. During the proposed construction works, with the identified mitigation measures in place, the significance of the residual effect of these temporary works will be '**noticeable and intrusive**' for a limited number of receptors for short periods. However, overall the impact of the temporary construction works is assessed as '**noticeable and not intrusive**' in terms of the PPG30 noise exposure criteria terminology. As such the temporary effect of the construction works is considered to be of '**moderate adverse**' magnitude, with a '**moderate**' significance for a few receptors for short durations, but overall of '**minor adverse**' magnitude, with a '**slight**' significance.
- 10.12. The residual effect of the operational phase, including cumulative effects of the proposed extension and existing quarry, will be '**noticeable and intrusive**' for a limited amount of receptors for short periods, but overall the longer-term impact of the operational works, including the ongoing operation of the existing quarry, is assessed as '**noticeable and not intrusive**' in terms of the PPG30 noise exposure criteria terminology. As such the effect of the operational works is considered to be of '**moderate adverse**' magnitude, with a '**moderate**' significance for short periods, but overall the longer-term impact is of '**minor adverse**' magnitude, with a '**slight**' significance.
- 10.13. No adverse effects are anticipated from the restoration proposals.

11. Dust and Air Quality

Introduction

- 11.1. The ES describes the existing air quality environment in relation to fugitive dust emissions and the potential for fugitive dust emissions and their effects from the construction and operation phases of the proposed extension to Linhay Hill Quarry. The key parameters of wind and rainfall in the local weather are described by reference to relevant data sources.

Baseline

- 11.2. The existing air quality is generally good and recent dust monitoring has demonstrated that levels of dust that escape beyond the quarry boundaries are well below the recognised threshold (the highest reading being only 15% of the guideline value). It is noted that the A38 carries some 39,000 vehicle movements a day, of which more than 2,000 are HGVs.

Dust assessment

- 11.3. The assessment considers the site activities in the proposals which have a potential to generate fugitive dust and how that may change or increase the potential impacts from dust on various receptors, including local residents and businesses, SDCC, and nearby wildlife sites.
- 11.4. The assessment evaluates the likelihood and possible magnitude of an impact of fugitive dust from the proposed activities on receptors in the vicinity of the application site and proposes a range of mitigation and monitoring measures.
- 11.5. The worst episodes will be during the overburden stripping and bund building works of stages 1 and 2, when effects are anticipated to be 'moderate temporary'.

Mitigation and residual effects

- 11.6. Although dust is an unavoidable consequence of soil stripping and bund construction, dust emissions are minimised through good quarry industry practices, as outlined in Guidance by the Institute of Air Quality Management.
- 11.7. Typical dust control measures include:
- Only work whilst the soil is in a suitable condition i.e. damp, cohesive rather than dry and dusty.
 - Minimise the extent of exposed areas.
 - Finished spoil tip areas to be smooth and planted as soon as possible.
 - Dampening areas with water spray.
 - Erect temporary netting around exposed areas to reduce wind speeds.
 - Reduce levels of work when the wind blows directly towards neighbouring houses.
- 11.8. Key measures for dust control from quarrying and processing minerals, and mitigation include:
- Water sprays on haul roads, primarily main access route and near processing plant.
 - Road surfacing.
 - Road sweeping.
 - Wheel washes.
 - Covers on delivery lorries.
 - Speed limits.
 - Bag filter extraction systems.
 - Modern blasting techniques.
- 11.9. Residual effects during construction would be deposited dust below levels which would cause annoyance, or a transient occurrence of localised dust deposition e.g. due to a sudden change in conditions such as wind strength or direction.
- 11.10. Residual effects from extracting in the existing quarry and extension area would continue to be below the recognised threshold.
- 11.11. Dust levels will be monitored at critical times.

12. Heritage Assessment

- 12.1. An assessment has been made in the ES of the potential for effects (both positive and negative) on the local cultural heritage (within a distance of 1km from both the centre of the proposed quarry extension and the centre of the new replacement roads).
- 12.2. This was done by a desk study of architectural records and a site visit. In addition following a request by the DNPA, an archaeological field evaluation was undertaken to assess the origin of the hedgerows within the extension area. The evaluation concluded that they are of historic, probably medieval, date.

Baseline

- 12.3. Within the 1km study area there is a total of 72 heritage assets, of which 13 are designated as Grade II Listed buildings. Direct and indirect impacts of the proposed development on these heritage assets has been assessed, with the following results:

Heritage impacts and mitigation

- 12.4. The quarry extension (both during the construction and operational phases) will make a long term change to the landscape which will have the adverse effect of altering the settings of the Listed Buildings at Alston Farm as well as Place House. However, the settings of these Listed Buildings are regarded as providing only a **small contribution to their significance**, with their architectural values being of much greater importance. Impact on the settings cannot entirely be mitigated against, although a woodland buffer is proposed between Alston Farm and the extraction area and bunds, preserving the setting in which their architectural and aesthetic values can be best appreciated. The residual significance of the effects on these assets is **slight adverse**.
- 12.5. The removal of the hedgerow field pattern is an irreversible adverse effect of the quarry extension during the construction phase. The proposed mitigation undertaken during the construction phase will allow for a record of the archaeological resource to be created. As has already been achieved through the trench evaluation, the mitigation of archaeological intervention during the construction phase will have a **minor beneficial effect** through the enhancement of knowledge of the archaeology of the enclosed land of the Dartmoor fringe farmland. This is a part of the Dartmoor National Park which has witnessed very little archaeological works, and when it does occur, it is usually on a very small scale. The quarry extension will be a rare opportunity to explore the history of this part of the landscape. This overall significance of effect taking into account the benefits of this mitigation will be **slight beneficial**.
- 12.6. The potential removal (or burying under a bund) of two buried former quarries on the southern edge of the extension area, if surviving, will have a **slight adverse** residual impact.
- 12.7. Indirect impacts from increased noise are also anticipated both for Alston and Place House. Place House is already in a busy environment due to its role as the Sixth Form centre for SDCC. Similarly, Alston House is already subject to existing noise generated by the A38. Thus these noise levels will not affect the significance of the assets, which primarily derives from their architectural value, with the impact predicted to be **slight adverse**.

13. Effects on Agricultural Land and Soil

Baseline

- 13.1. The existing businesses within the footprint of the proposals are Alston Farm and Fine Turf. The proposals will result in the permanent loss to quarrying of 14 hectares (ha) of land used for farming and 7 ha of land used for turf growing. Formation of the bunds will result in the loss from current use to woodland of 11 ha, 9.75 ha from the farmed land and 1.25 ha of turf growing land.
- 13.2. A further 2.7 ha of existing farmland is proposed to be planted as new woodland (2.2 ha at Alston and 0.5 ha at Waye). Loss of active farmland to road building in Waye Lane and access to Alston amount to 1.6 ha. Total loss to the Alston Farm holding will therefore be approximately 14ha + 9.75ha + 2.7ha + 1.6ha = 28.05 ha; 12.4 hectares of which will become woodland. Loss to Turf Growing will be approximately 7ha + 1.25ha = 8.25 ha.
- 13.3. The quarry extension area is part of a much larger holding held on a tenancy from Glendinning. The area currently farmed is about 160 hectares consisting of approximately 50 fields in a variety of sizes separated by hedgerows and woodland blocks. The farming enterprise is predominantly beef using Hereford cattle, but sheep are also raised. Fodder cropping is a combination of hay and silage, with the proportion being roughly 50-50, depending on the weather and season; the preference is to make hay wherever possible because this is less expensive for the type of operation run.
- 13.4. The farm is registered organic. The eastern part of the extension area and higher parts of the farm to the north are the subject of an Organic Entry Level Stewardship Scheme which is due to end in July 2018.
- 13.5. Four fields comprising some 7 ha of the extension area is used permanently by Fine Turf for growing turf as part of the turf business. This involves growing and stripping turf for sale. No additional topsoil is used in this process. This land is not organic and not subject to any Stewardship Scheme.
- 13.6. The extension area is considered to be Grade 3b, described as moderate quality agricultural land, 'Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year'. The remaining part of the area farmed is also considered to be Grade 3b.

Effects on Agricultural Land

- 13.7. The quarry extension is not anticipated to result in significant alteration to the ongoing farming enterprise at Alston Farm. Before Glendinning purchased Alston Farm, the farmer previously farmed a smaller area of land focussed on Waye Farm, and was always aware that Glendinning intended to apply for planning permission for the quarry extension when Alston Farm and Caton Farm were added to the land holding. The remaining part of the tenancy holding is still sufficient for a viable enterprise. A recent decision to discontinue a dairy herd was made for different reasons associated with the wider economic climate for dairy farming.
- 13.8. The access alterations resulting from the loss of Alston Lane is not likely to be significant to the farming enterprise. Deliveries to and from the farm are low amounting to only one or two lorry loads a month. Access to Ashburton is the predominant destination for day to day supplies, and the distance involved will be shortened as a result of the proposals. The current access off Alston Lane is very restricted, so larger vehicles cannot turn right off Alston Lane. Instead they use the access and yard at Fine Turf to turn around so they can enter the Alston Farm access from across the road. The alternative access provided as part of the proposals will be accessed direct.
- 13.9. Subdividing fields to recreate the historic field pattern will not interrupt the current farming regime.
- 13.10. Similarly the quarry extension and alterations to the road network are not likely to be significant to the ongoing turf enterprise Fine Turf, based at Lower Waye. The operation uses several parcels of land elsewhere for turf growing, and is not reliant on the 7 ha within the extension area. Replacement land can easily be found, and provided the alternative route via Waye Lane is adequately signed, the operator is of the view that access will be easier than as present.
- 13.11. Both businesses report long established and positive relationships with Glendinning which are anticipated to continue if the quarry extension goes ahead.

Effects on Soils

- 13.12. A strategy for the temporary storage of topsoil has been prepared and a number of mitigation measures exist in relation to ways to care for the soil impacted by the development, including guidance in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009). Surplus

topsoil not required for restoration will be sold for use elsewhere as has been the practice in the past thus allowing for the reuse of the soils.

Conclusion

- 13.13. The proposal to deepen the existing quarry so that overburden from stages 3 and 4 of the quarry extension can be backfilled into the quarry void has reduced the potential effects on agricultural and turf growing land and on topsoil. The effects are further mitigated by the division of the quarry extension into stages spread out over an estimated 46 years.
- 13.14. Sensitivity is low for both 'land use and tenure' and 'agricultural practices and soil resources' resulting in a **slight** impact from the proposals.
- 13.15. The magnitude of effect is **minor** for land use and tenure and **negligible** for agricultural practices and soil resources resulting in a **slight** impact from the proposals.
- 13.16. The overall residual effect is considered to be **slight** in EIA terms.

14. Other Impacts

Land Stability

- 14.1. A revised Land Stability Risk Assessment (LSRA 2020) has been prepared incorporating the results of further baseline hydrogeological monitoring and specific land stability surveys and assessment. The methodology followed in the LSRA 2020 follows the relevant advice in the NPPF and Planning Policy Guidance. This largely supersedes the LSRA in the original submission and a subsequent LSRA prepared in 2018.
- 14.2. The baseline situation is described with respect to topography, geology, hydrology and hydrogeology, and potential sources of land instability together with factors which may affect the local occurrence of sinkholes. The conclusion is that there are ongoing land stability risks which are inherent to all karst landscapes, principally associated with changes to drainage by human intervention.
- 14.3. Against this background, potential causes of land instability associated with the proposals for the extension and deepening of the quarry have been considered, namely changes to surface water management, quarry dewatering, and ground loading associated with the proposed overburden bunds. These are described in turn, together with qualifying factors from the investigations which moderate the potential risk of sinkholes being caused by them. In parallel specific mitigation measures are proposed in a Karst Management Plan comprising drainage control, land stability monitoring alongside the hydrogeological monitoring, regular reporting of monitoring data together with periodic reviews and reassessments as the proposals gradually progress, and a method for sinkhole repair.
- 14.4. A key feature of the quarry extension and deepening proposals is that they will be implemented in a series of stages with a comprehensive programme of targeted and general monitoring which will allow early identification of an adverse consequence due to the proposals, and ensure that a developing hazard, if one occurs, is identified at an early stage which will enable timely corrective action to be taken as necessary.
- 14.5. Potential receptors or land uses and their sensitivity to land stability risk are listed and considered in turn against the identified risk levels, taking account of the mitigation. Each of the identified receptors is assessed against relevant existing sinkhole risk factors plus those associated with the proposals to derive the potential residual land stability effects associated with the proposals.
- 14.6. The finding is that the combination of qualifying factors together with implementation of the drainage control and other mitigation measures mean that residual land stability effects of the quarry extension and deepening proposals are of slight or neutral significance. The exception is Alston Cottage for which the residual land stability effect was found to be of **moderate** significance in EIA terms.
- 14.7. In buried karst terrain which exists in several areas within south Devon there will always be residual uncertainty regarding the precise location and timing and severity of individual sinkholes, if any were to occur, though for the Chercombe Bridge Limestone Formation around Linhay Hill Quarry that residual risk is minimised by the Karst Management Plan.
- 14.8. Furthermore it should be borne in mind that most other limestone quarries in the UK are also in karst limestone, many of them notably larger and deeper than Linhay Hill Quarry.

Climatic Factors

- 14.9. In the ES, climatic factors are addressed in two ways:
1. The likely effect of the proposals on climate change
 2. The likely effect of climate change on the proposals.

The likely effect of the proposals on climate change

- 14.10. All activities undertaken throughout the world that involve the use of fossil fuels contribute to climate change through the release of emissions, in particular CO₂. The introduction of tighter European vehicle emission and fuel quality standards since 1993 has been the most important way of reducing vehicle emissions and improving air quality in Europe. Vehicle emission standards are tightened every five years or so resulting in a steady decrease in emissions of oxides of nitrogen, carbon monoxide, hydrocarbons and particles.
- 14.11. The fleet of lorries at Linhay Hill Quarry is in line with European and national measures to tackle climate change.

- 14.12. Linhay Hill Quarry is located in a highly accessible position immediately adjacent to the A38. The A38 corridor is the basis of the Spatial Strategy in the emerging Devon Minerals Plan, which is in an advanced stage of preparation, with the EiP held in May. In the Plan Linhay Hill Quarry is identified as a Strategic Quarry due to the importance of its contribution to overall supplies of limestone in Devon, and its accessible location on the A38.
- 14.13. The quarry is well placed to supply materials to the locations where the bulk of future development in Devon is focussed in south and central Devon, so the proposed extension offers a means to continue this supply. Alternative sources of supply are expected to require haulage from greater distances, as scope to import by rail or sea are very limited.
- 14.14. For these reasons the proposed quarry extension is not anticipated to have a significant impact on climate change either because of its contribution to global emissions or in comparative terms compared with alternatives. In addition, in terms of the local environment i.e. compared with the daily 39,000 vehicle movements on the A38, the quarry's traffic and other emissions are negligible.
- 14.15. The quarry will continue to operate in compliance with all relevant vehicle emission standards, as well as following good practice in relation to other energy efficiencies and good resource management.

The likely effect of climate change on the proposals

- 14.16. The likely effect of climate change on the proposals has been taken into account in their design in all respects in accordance with the latest guidance from the Environment Agency issued in early 2016. Key aspects are effects on the water environment, especially surface water management, flood risk and groundwater.
- 14.17. In regard to other aspects, such as landscape planting (such as the choice of species or method of planting and aftercare), and ecological mitigation measures (length and timing of the seasons), all the main operations are to be undertaken in the early stages of the development, and hence will not need to be adjusted to take account of future climate change.
- 14.18. Given the prolonged nature of the proposed scheme (60+ years duration) the report does not take into account potential future pressures on the landscape caused by climate change trends and impacts notably the possible influence on vegetation composition and land cover which may themselves have a resultant effect on the landscape character of the area.

Recreation

Ashburton Footpath 16

- 14.19. Ashburton Footpath 16 is to be diverted to allow the construction of Waye Lane. The footpath will be diverted prior to any construction of Waye Lane using the procedure under s257 of the Town and Country Planning Act.
- 14.20. The footpath is not a strategic link as it does not join any other footpaths, and is not a named length. There are no known historically interesting factors associated with the route. Part has previously been diverted from its earlier route, following grant of planning permission 87/0683/31/3D in 1988. For these reasons, despite its proximity to Ashburton, whilst the availability of a footpath is of high importance, the route itself is considered to be of low importance,
- 14.21. The length of footpath to be diverted is about 830m from the Balland Lane end. The remaining 540m to reach Alston Lane will remain on the farm track and the tarmac drive.
- 14.22. The replacement route seeks to maintain as much as possible the present informal feel to the route, and for about a third of its length will be separated from the Waye Lane route by a hedgerow, and pass along the edge of fields. The remaining length will be separated from Waye Lane by a fence.
- 14.23. The diverted footpath will cross Waye Lane at one point. The Traffic and Access assessment shows that impact on pedestrian delay and amenity (fear and intimidation) due to traffic movements at this point will be negligible because of the low level of traffic movements (less than five vehicles per hour).
- 14.24. For this same reason, the impact on the recreation experience from walking alongside the new lane whilst being separated by a fence as opposed to a hedgerow is also considered to be negligible. There will be no change to the top part of the existing route, but an additional length of public footpath will be provided running alongside the northern end of Waye Lane for a distance of approx. 340m.
- 14.25. This will offer an off road alternative to the tarmacked driveway at the top end of the current route, and/or the opportunity for a loop at the far end, so walkers can follow a '9' shaped route, rather than there and back.

Other recreation opportunities during operation

- 14.26. Due to this area falling within an 'Area of Opportunity' for recreation in the Dartmoor Management Plan, opportunities for additional public access include two additional new footpaths offering an extension to Ashburton footpath 16, which will be opened in stages 1 and 3 to fit in with the progress of the quarry extension. This is assessed as being of moderate beneficial significance.
- 14.27. A number of other opportunities are under investigation and will be confirmed in the S106 agreement as appropriate.

Restoration Strategy

- 14.28. The final Restoration Strategy provides a major new opportunity for public access and informal recreation in a location that is highly accessible to Ashburton residents and to the wider public, and within the 'Area of Opportunity' referred to above. This too is considered to be of moderate beneficial significance.

Air Safety

- 14.29. The quarry and extension area are more than 30km from Exeter Airport, and therefore outside the safeguarding zone for the airport. Hence there is no effect on airport safety from the proposals. This has been confirmed with the airport operators.

Sustainability

- 14.30. Sustainability combines economic, social and environmental dimensions. The concept of 'sustainable development' is a fundamentally important aspect in the Planning System.
- 14.31. Glendinning has an active approach to sustainability. The Company is closely involved in carbon reduction initiatives through the UK Minerals' Forum, a body set up to debate and inform government and the public on the prudent use, sustainable management and supply of UK minerals.
- 14.32. The quarry is registered under ISO 14001, which includes a wide range of energy and water efficiency management measures. The quarry recycles its own reject products within its site where necessary, and imports construction and demolition waste to produce recycled aggregates, which it sells along with its other products. All quarry plant operates in accordance with Environmental Permits issued by Teignbridge District Council Environmental Health Department. A Discharge Permit from the Environment Agency controls the discharge of pumped water from the base of the quarry.
- 14.33. In September 2010 Glendinning was one of the first companies to complete the BAA Quarry Safe audit and received a Safety Award for its rigorous approach to industry standards to ensure that the business is operating in a safe and compliant manner.
(see <http://www.ejwglendinning.co.uk/news/major-industry-safety-award-for-glendinning>)
- 14.34. The most fundamental sustainability aspect of the development is the introduction of the revised working scheme in early 2016, now incorporated into the application proposals. Under the revised working scheme, overburden from the later stages of the quarry extension will be backfilled into the deepened base of the existing quarry instead of being tipped on land adjacent to the extension. This is the key sustainability feature of the proposals because it has increased the economic benefits by further lengthening the life of the extended quarry, whilst at the same time reducing adverse environmental impacts on all other receptors. The resulting proposals are therefore a significant sustainability gain derived from the iterative nature of the EIA process.
- 14.35. The proposals incorporate aspects of all three dimensions of sustainable development in the economic and social benefits that it offers, and the extent to which all opportunities for environmental improvements have been adopted, alongside a full suite of mitigation measures.

15. Assessment of Cumulative Effects

Introduction

- 15.1. The following different types of cumulative assessment have been considered in the ES:-
- a) Assessment of effects of the extension in combination with the existing quarry
 - b) Assessment of cumulative effects of the extension's staged progression
 - c) Cumulation of all types of effects from the extension.
 - d) Assessment of the project in combination with other projects nearby.
- 15.2. In the ES, cumulative effects a) to c) have all been incorporated into the assessments described in the Chapters above. The following looks at type d).

In Combination with other projects nearby

- 15.3. The following types of projects have been considered for their likelihood to contribute to the effects on the environment associated with the proposed extension to Linhay Hill Quarry.
- Existing completed projects in the surrounding area;
 - Plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
 - Plans and projects which are reasonably foreseeable, i.e. allocations or projects in adopted development plans for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Existing completed projects

- 15.4. Existing completed projects have been taken into account as all the baseline measurements include the effects of these activities, e.g. traffic on A38, activities and recent developments at SDCC etc.

Plans or projects for which an application has been made

- 15.5. The DNPA reports that there are no plans or projects for which an application has been made that have potential to contribute towards cumulative effects with the proposals.

Plans and projects which are reasonably foreseeable

- 15.6. The adopted Core Strategy and DNPA DPD shows two land allocations in the northern part of Ashburton:
- An affordable housing site of 1.1 ha between Roborough Gardens and Longstone Cross in Policy ASH1.
 - A site of 3.5 ha for mixed development at Chuley Road in Policy ASH2. A planning application for 23 houses on part of this site was approved in December 2018, which included flood relief works to the existing channel of the Ashburn River and other drainage works.
- 15.7. These sites are not considered to be likely to have cumulative or in-combination effects because:
- ASH1 site is more than 500m distance and in a different water catchment area.
 - ASH2 site is in the southern part of Ashburton. The site is clearly downstream, so there is potential downstream connection re flood attenuation. However the ASH2 site is also downstream of the Ashburn Catchment, which is much larger than the Balland Catchment and carries much more water. So any potential benefit from the flood attenuation in the Balland Stream would be negligible at the ASH2 site.

16. Cumulative Residual Impacts

16.1. The ES concludes that the overall significance of the cumulative residual impacts of the extension of Linhay Hill Quarry taking into account the proposed mitigation is as shown in the following table:-

Table 16-1 – Overall Assessment of the effects of the Linhay Hill Quarry proposals

Effects which are moderate and above are shaded **grey** where adverse, and **yellow** where beneficial.

Receptor/Type of Effect	Construction	Operation	Restoration
Landscape Stage 0	Slight	Neutral	Assessed with operation
Landscape Stages 1 and 2	Large	Moderate	Assessed with restoration - below
Landscape Stages 3 to 5	Moderate	Moderate	Assessed with restoration - below
Landscape Restoration	n/a	n/a	Slight beneficial
Baseline landscape restoration	n/a	n/a	Slight
Visual Stage 0	Moderate (5) Slight or Neutral (29)	Slight or neutral (all)	Assessed with operation
Visual Stage 1	Moderate (7) Slight or Neutral (27)	Moderate (5) Slight or Neutral (29)	Assessed with operation
Visual Stage 2	Large (2) Moderate (8) Slight or Neutral (24)	Large (2) Moderate (7) Slight or Neutral (25)	Assessed with operation
Visual Stages 3 and 4	Large (1) Moderate (5) Slight or Neutral (28)	Large (1) Moderate (5) Slight or Neutral (28)	Assessed with operation
Visual Stage 5	n/a	Large (1) Moderate (5) Slight or Neutral (23) Slight beneficial (5)	Assessed with operation
Visual Restoration	n/a	n/a	Moderate beneficial
Employment -	Moderate Beneficial	Moderate Beneficial	Not assessed
Local Economic - Resilience	Not assessed	Moderate Beneficial	Not assessed
Tourism	Not assessed	Neutral	Not assessed
Competition	Large beneficial	Large beneficial	n/a
Use of Resources	Large beneficial	Large beneficial	n/a
Internationally Designated Statutory Sites (SAC)	Neutral	Neutral	Neutral
Nationally Designated Statutory Sites (National Park)	Neutral	Neutral	Neutral

Receptor/Type of Effect	Construction	Operation	Restoration
Locally Designated Sites (CWS / UWS)	Neutral	Neutral	Neutral
BAP habitats: Hedgerows	Neutral	Neutral	Neutral
BAP habitat: Broad-leaved Woodland	Moderate Beneficial.	Moderate Beneficial	Moderate Beneficial
Other Habitats: Species-rich Grassland	Slight Beneficial	Slight Beneficial	Slight Beneficial
Other Habitats: Open Water	Slight Beneficial	Neutral	Neutral
Other Habitats: Running Water	Slight Beneficial	Neutral	Neutral
Notable Flora	None	Large Beneficial	Large Beneficial
Protected and notable fauna – dormice	Large Beneficial	Slight Beneficial	Slight Beneficial
Protected and notable fauna – Roosting bats	Not significant	Large Beneficial	Large Beneficial
Protected and notable fauna – Foraging / commuting bats	Not significant	Large Beneficial	Large Beneficial
Protected and notable fauna – Badger	Slight Beneficial	Slight Beneficial	Slight Beneficial
Protected and notable fauna – Breeding Birds	Moderate Beneficial	Moderate Beneficial	Moderate Beneficial
Protected and notable fauna – Reptiles	Slight Beneficial	Slight Beneficial	Slight Beneficial
Protected and notable fauna – Invertebrates	Moderate Beneficial	Moderate Beneficial	Moderate Beneficial
Subterranean Flora	Slight	Slight	Slight
Traffic and Access – Balland Lane	Slight	Moderate beneficial	Moderate beneficial
Traffic and Access – Caton Lane	Slight	Slight	Slight
Improvements to Caton Cross Traffic safety and driver stress	Slight	Moderate beneficial	Moderate beneficial
Traffic and Access – Community Severance and Public transport - operation	Slight	Slight beneficial	Slight beneficial
Surface water flows in Balland Stream catchment	Slight beneficial	Slight beneficial	Slight beneficial
Surface water flows in Kester Brook r catchments	Slight	Slight	Slight
Water resources within the Chercombe Bridge Limestone Formation Principal Aquifer	Slight	Slight	Neutral

Receptor/Type of Effect	Construction	Operation	Restoration
Water resources within Secondary Aquifers around the CBLF, such as to the north the Crackington Formation which includes the St Mellion Formation, and to the south the Gurrington Slate Formation.	Neutral	Neutral	Neutral
Water quality in rivers Ashburn and Lemon catchments	Slight	Slight	Neutral
Private water supply in the groundwater catchment of the Kester Brook	Neutral	Slight	Neutral
Little Barton and Mead Cross UWSs	Neutral	Neutral	Neutral
Surface water flood risk in Balland Stream catchment	Moderate beneficial	Moderate beneficial	Moderate beneficial
Surface water flood risk in Kester Brook catchment	Slight beneficial	Slight beneficial	Slight beneficial
Groundwater flood risk in quarry and along Kester Brook to south of Goodstone	Slight	Slight	Slight beneficial
Fluvial flood risk to Ashburton from Balland Stream	Moderate beneficial	Moderate beneficial	Moderate beneficial
Noise	Slight	Slight	Neutral
Vibration	No change	Neutral	Neutral
Dust	Slight temporary	Slight	Neutral
Heritage – Listed Buildings -	Slight	Neutral	Neutral
Heritage – other assets	Slight beneficial	Slight beneficial	Neutral
Agricultural Land -	Slight	Slight	Slight
Agricultural and turfing businesses	Slight	Slight	Slight
Topsoil	Neutral	Neutral	Neutral
Land stability in existing Linhay Hill Quarry	Neutral	Neutral	Neutral
Land stability in Balland Lane, Waye Lane	Neutral	Neutral	Neutral
Land stability on new Alston access	Slight	Slight	Slight

Receptor/Type of Effect	Construction	Operation	Restoration
Land stability in extension area and bunds including diverted Alston stream	Slight	Slight	Slight
Land stability at Ashburton, SDCC, and Linhay Business Park, and Lower Waye, Alston Farmhouse, Lower Caton, Gale Road, Mead Lane, and Mead	Slight	Slight	Slight
Land stability at Alston Cottage	Moderate	Moderate	Moderate
Land stability on A38	Slight	Slight	Slight
Land stability in Caton and other areas on the CBLF within 1km of the application red line	Neutral	Neutral	Neutral
Climatic factors	Neutral	Neutral	Neutral
Recreation – Footpath Ashburton 16	Neutral	Neutral	Neutral
Recreation - Operation and restoration	No change	Moderate beneficial	Moderate beneficial

Figures

1. **Landscape Mitigation and Restoration Strategy – Stages 0-6 (7 drawings)**
2. **Ecological Mitigation and Enhancement Strategy**
3. **Photomontages**

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