Green Circle Aggregates Ltd
Longlands Quarry, Corntown

ENVIRONMENTAL STATEMENT
to accompany a Planning Application for the retention of existing Limestone Quarry; proposed relinquishment of consented mineral reserves below lowest current quarry floor level in favour of eastern lateral extension to existing quarry, with progressive restoration to low level agriculture

FEBRUARY 2019
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1.0 INTRODUCTION

This planning application and Environmental Statement (ES) have been prepared on behalf of Green Circle Aggregates Ltd (‘the applicant’). The ES has been written to be read in conjunction with and to provide supporting evidence to the mineral planning application for permission for a lateral extension to the east of the existing permitted limestone quarry (‘the proposed development’) at Longlands Quarry, Corntown, Bridgend.

As part of the proposals, the applicant is seeking to retain the existing quarry and associated structures but would be prepared to relinquish permitted reserves at depths below the existing floor in favour of a lateral eastern extension. The proposal provides phased development plans for the extension area and provides a holistic landscape restoration concept for the entire application site.

An indicative map of the location of the site can be found in Figure 1.1 overleaf. The planning application area incorporates the existing extraction areas as approved under Application Ref 1997/01242/FUL granted in June 1998.

The planning application area encloses the entire c.8-hectare operational quarry development area together with a proposed 7.2-hectare easterly extension area. The proposals will provide a sustainable development and the continued supply of mineral resource through phased development and restoration landform design which delivers an overall restoration scheme for the entire development site.

The ES considers the environmental aspects within and around the proposed development project, which potentially could experience impacts as a result of the proposal.
As part of the proposals, the development will see the relinquishing of (conditionally) consented mineral reserves below lowest current quarry floor level of 40maOD in exchange for a lateral extension with its deepest sinking at 46maOD.

![Figure 1.1: Site Location](image)

The advantages of this approach are that it avoids the requirement for dewatering at the site, and as a result, there would be no requirement for a permanent water body as part of the restoration proposals. The quarry floor could then be returned to an alternative beneficial after-use, with greater flexibility as to its end use, with low level agriculture to match the surrounding land use proposed.

In order to maintain the Applicant’s existing reserve contribution to the Mineral Local Plan, whilst delivering a dry restoration concept, an easterly extension is required to maintain the levels of aggregate supply necessary to sustain the existing business and the site’s contribution towards the Council’s land bank.
1.1 **ES Format and Structure**

The ES has been prepared in accordance with the appropriate regulations governing such assessments; The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (the Regulations). A request for a Screening Opinion in respect of the proposed development was made to the Vale of Glamorgan Council (VoGC) in June 2018. A copy of the request to VoGC is appended at Appendix 1.1.

Whilst it has been confirmed by VoGC that the proposals are not considered likely to result in significant effects, by way of an EIA scoping opinion (see Appendix 1.2). The production and submission of this ES is voluntary. In the interests of thoroughness this ES has been provided in order to assist the Council in the determination of the planning application.

This ES considers the various elements of the proposed development, the potential impacts that could arise and identifies suitable mitigation measures, if necessary and appropriate, to ensure that the development will have no significant or unacceptable adverse impacts. Several specific environmental aspects have been identified for in-depth study including, geology, visual appraisal, ecology, hydrogeology, archaeology, noise and dust. These aspects are fully considered within the subsequent sections of this assessment.

The ES comprises two separate volumes. The Non-Technical Summary and the Main Report forming Volume I and the Appendices forming Volume II.

The ES is produced in a grouped format structure. As a result of this approach, topics such as population are covered to varying degrees in most of the individual sections, whereas other specific areas required under legislation fall almost exclusively into one section. For those aspects of the environment likely to be significantly affected by the proposed development, that fall neatly into one or two sections, the sections within which they are covered are shown in Table 1.1 below.
Table 1.1: Sections within ES that cover aspects specified in the Regulations

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<th>Aspects Required to be covered under the Regulations</th>
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<td>Water</td>
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<td>6</td>
<td>Water Environment</td>
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<td>7</td>
<td>Noise</td>
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<td>9</td>
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<td>10</td>
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1.2 Planning History - Overview

The site has an extensive planning history with the majority of applications linked to the permission as issued, under the Environment Act 1995 for updated working conditions which was issued in June 1998 (Application Ref 1997/01242/FUL). A copy of the Decision Notice is appended at Appendix 1.3.

The permission and the conditions attached to it, have been amended a number of times, under Section 73 of the Town and County Planning Act 1990. The most recent application at the site (Ref 2017/00103/FUL) was for the removal of Condition 25 of the original consent (as amended). A copy of the Decision Notice is appended at Appendix 1.4.

Under planning law, permissions granted under Section 73 of the Act are considered to be standalone permissions, as such, the current planning permission for extraction at the site is Planning Permission Ref 2017/00103/FUL.

Condition 3 of the permission states:
“No excavation shall take place below a level of 40 metres above Ordnance Datum except in accordance with the scheme of groundwater monitoring and mitigation approved on 30th October, 2002, and no excavation shall take place below a level of 25 metres above Ordnance Datum until a further scheme including a detailed assessment of quarry dewatering on the features identified in the water features survey submitted with the application for the determination of new working conditions in December 1997, and seasonal high and low groundwater data from boreholes that provide representative water levels within the Carboniferous limestone within which the quarry is situated and proposing:

a) measures for the monitoring of ground water throughout the duration of mineral extraction below 25 metres AOD; and

b) mitigation measures to be taken should any depletion or derogation occur to the aquifer, has been submitted in writing to and approved in writing by the Mineral Planning Authority.

Reason: In order to protect ground water resources”.

Subject to providing detailed assessments of quarry dewatering on water features, extraction is permitted at the site to a maximum depth of 25m AOD. The existing quarry floor levels vary between c41m AOD in the western part of the floor and 46m AOD in the eastern part. This planning application seeks permission to retain the existing workings and the existing infrastructure associated with the existing quarry development and extend workings to the east of the permitted extraction area, effectively extending the existing quarry floor. The proposed extension area would be worked to a maximum depth of 46m AOD, to match the existing floor levels at the eastern end of the existing quarry floor. The proposed development would see relinquishing of (conditionally) consented mineral reserves below lowest current quarry floor level of 40maOD in exchange for a lateral extension with its deepest sinking at 46maOD.
As a result of the proposed development, the applicant would be prepared to relinquish working to a maximum depth of 25mAOD in the existing quarry as permitted via Condition 3 of 2017/00103/FUL.

Full details of the proposed development are provided at Section 4 of this ES.

Planning permission was also granted at appeal for an inert recycling centre at the site (Planning Application Ref: 1998/00019/FUL). A copy of the Decision Notice is appended at Appendix 1.5. No changes are proposed to this permission and it is proposed that it remains unaffected as a consequence of this planning application.

1.3 **Environmental Statement Contributors and Competency**

The Applicant appointed Quarryplan Limited to manage and prepare the planning application as well as administer and 'project manage' the preparation of the ES.

The preparation of the planning application and the project management of the production of the ES has been undertaken by Chris Tinsley on behalf of Quarryplan Ltd. Chris holds a BA (Honours) Degree in Town Planning and a Diploma in Town Planning both conferred by Newcastle University. He is a member of the Royal Town Planning Institute. Chris is a chartered town planner who has worked on projects for a range of development types across the UK, including projects in South Wales. Chris in his role as Senior Planning Consultant for Quarryplan Chartered Quarrying Consultants has managed numerous planning applications for minerals development projects, including the production and submission of Environmental Statements.

Several sub consultants have been appointed by Quarryplan to consider and assess the likely environmental impacts on all environmental matters pertaining to the proposed development. These key consultants include:
Quarrydesign- Quarry Design & Geotechnical Appraisal (Adrian Wilkinson)- This quarry development scheme has been produced by Adrian Wilkinson who is an Engineering Geologist with over 26 years quarrying industry experience undertaking site investigations and producing quarry development plans. He is a Chartered Geologist and Fellow of The Geological Society of London, a Member of the European Federation of Geologists, a Fellow of the Institute of Quarrying and a Member of the Irish Mining and Quarrying Society. He holds an honours Degree in Applied and Environmental Geology awarded from the University of Birmingham in 1993 and a Post Graduate Diploma in Applied Geotechnics awarded from Camborne School of Mines in 2011.

He was formerly employed by RMC (now Cemex) and then Tarmac before forming Land and Minerals Consulting Ltd (trading as QuarryDesign) in 2004. He is a ‘Geotechnical Specialist’ under the Quarries Regulations 1999, a ‘Competent Person’ as defined by the Pan-European Reserves & Resources Reporting Committee for the Reporting of Exploration Results, Mineral Resources and Minerals Reserves (“PERC Standard”), has advised on due diligence for mergers and acquisitions of aggregate quarries and has acted as an Expert Witness on minerals related matters. He also holds a Basic National UAS Certificate (BNUCs) to commercially fly Small Unmanned Aerial Systems.

BCL Hydrogeologists and Hydrologists (Including Flood Risk and Drainage) (Gavin Chaplin)- Gavin is a Principal Hydrogeologist at BCL. He has a B.Sc. (Hons) Geology & Management Science conferred by Keele University and an M.Sc. Groundwater Engineering from the University of Newcastle upon Tyne. BCL, which was formed in 2000, has gained experience as the principal supplier of hydrogeological and hydrological service to one of the UK’s largest aggregates companies (Tarmac) which enables BCL to deliver practical, pragmatic and cost-effective solutions to all water related problems facing industry. Projects are undertaken in a wide range of hydrogeological terrains and span from the provision of informal advice upon water related matters, to complex assessments in support of major developments.
Neo Environmental- Ecology (Dawn Thompson). The assessment has been conducted by an ecologist registered with the Chartered Institute of Ecology and Environmental Management (CIEEM). All work has been carried out in line with the relevant professional guidance; CIEEM’s Guidelines for Preliminary Ecological Appraisal and the Environment, Heritage and Local Government’s Guidance on Appropriate Assessments.

Dawn Thompson is an experienced ecologist with over eight years of experience in ecological surveys and assessments. She is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and the Association of Environmental & Ecological Clerks of Works (AEECoW). Dawn has experience in undertaking and managing a range of surveys and assessments including Ecological Impacts Assessments, Natura Impact Assessments / Appropriate Assessments, extended phase 1 habitat surveys, as well as ornithological, and protected species surveys, for over 300 projects. These numerous projects include a variety of development types such as energy, residential, utilities, roads and flood prevention schemes.

Vibrock- Noise and Air Quality (Steven Edwards) – The assessments have been undertaken by Steven Edwards. Since 2010, Steven Edwards MSc MIOA has undertaken work in Noise and Air Quality impact assessments in support of planning applications whilst working for Vibrock Limited, an established independent environmental consultancy and member of the Association of Noise Consultants who have been providing noise, dust and vibration consultancy services to the quarrying industry for over 25 years. Mr Edwards specialises in the measurement and assessment of environmental noise and dust for a wide range of applications within the industrial, commercial, residential, waste disposal and mineral extraction sectors. His work has also included occupational noise, dust, LEV and vibration surveys. Mr Edwards holds an MSc in Applied Acoustics, a HND in Professional Sound and Video Technology, City & Guilds Sound Engineering Parts 1 & 2 and is a Corporate Member of the Institute of Acoustics.
David Jarvis Associates- Landscape and Visual (William Brown)- The LVIA has been prepared by William Brown CMLI, CMIEEM, CEnv, a Chartered Landscape Architect from David Jarvis Associates (DJA) Limited. DJA is a multidisciplinary firm with extensive experience in the planning, assessment, design and implementation of minerals schemes. The firm is a Registered Practice of the Landscape Institute.

Andrew Josephs Associates- Cultural Heritage (Andrew Josephs)- The Assessment and Heritage Statement has been written by Andrew Josephs, Managing Director of Andrew Josephs Associates, a consultancy specialising in archaeology and cultural heritage founded in 2002. He has extensive experience of all periods and facets of cultural heritage, including the authorship of over 800 Heritage Statements.

He was previously Principal Consultant (Director of Heritage and Archaeology) at AMEC and Wardell Armstrong, where he started in 1992, becoming one of the UK’s first consultants in the post-PPG16 era of developer funded archaeology. Prior to 1992, he worked as a field-based archaeologist and researcher for universities and units in the UK, Europe and the USA. He graduated with a BA (Honours) in Archaeology and Environmental Studies in 1985.
2.0 SCOPE OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The establishment of the extent of the scope of an environmental impact assessment forms an integral part of the overall process. The aim of the scoping study is to consider at the earliest opportunity all elements that the proposed development may impact upon. In addition, it is incumbent upon the assessment to consider alternative locations for the development.

Alternatives must be reasonable. They should not include ideas that are not technically possible, unfeasible or illegal. The types of alternatives that can be realistically considered by a developer will also vary. This is true of mineral planning; where the mineral can only be extracted from where it is found.

It is reasonable, in this case, to consider the option of exploitation of carboniferous limestone from other sites where it is found; if the mineral is appropriate to the Applicant’s customer’s needs, if the scale of the operation and processes are feasible and if other mineral operators/landowners are willing to sell/lease their reserves or land holdings to the Applicant.

Essentially, alternatives should indicate to the competent authority why this project, and not some other, is being proposed in this location and not in some other\footnote{Glasson, Therivel & Chadwick, Introduction to Environmental Impact Assessment, 4th Edition, 2012 Routledge at page 90}.

2.1 Alternative Locations

It is recognised within local and national planning policy that minerals are unusual in development terms, in that, that they can only be worked where they naturally occur, so the usual criteria applied in site searching exercises, which is predominantly development plan led, cannot be wholly adopted.
The location of minerals developments is not only governed by geological constraints, but as haulage comprises such a large percentage of selling price (in the region of 25-40%), geographical location is also a key component. Due to the market forces of supply and demand this constrains mineral operations to a given distance from a target market.

**Table 2.1** below outlines the selection process that has been adopted in arriving at the position that an extension of the Longlands Quarry provides the Best Practical Environmental Option (BPEO) for a development of this magnitude.

The following are active mineral working sites in the Vale of Glamorgan and inactive sites where future working is considered likely to occur, as identified in the Vale of Glamorgan Local Development Plan, adopted June 2017.

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<th>Site No.</th>
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<td>Aberthaw</td>
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<td>Liassic limestone reserves which cannot be used as aggregate. Mineral not suitable.</td>
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<td>2</td>
<td>Ewenny</td>
<td>Inactive</td>
<td>Site owned by Tarmac. Unavailable for acquisition. The site is some 16ha and therefore too large for the applicant's requirements.</td>
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<tr>
<td>3</td>
<td>Forest Wood</td>
<td>Active</td>
<td>Unavailable for acquisition. The site is some 37ha in size and is therefore too large for the applicant's requirements.</td>
</tr>
<tr>
<td>4</td>
<td>Pant</td>
<td>Active</td>
<td>Unavailable for acquisition. The site is some 13ha in size and therefore too large for the applicant's requirements.</td>
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<td>5</td>
<td>Pantyffynon</td>
<td>Active</td>
<td>Site owned by Seth Hill &amp; Son. Unavailable for acquisition. The site is of a similar size and nature to that at Longlands, however</td>
</tr>
<tr>
<td>6</td>
<td>Lithalun</td>
<td>Active</td>
<td>Site owned by Hanson UK. Unavailable for acquisition.</td>
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<td>7</td>
<td>Wenvoe</td>
<td>Active</td>
<td>Site owned by Cemex UK. Unavailable for acquisition.</td>
</tr>
<tr>
<td>8</td>
<td>Garwa Farm</td>
<td>Inactive</td>
<td>Site owned by Tarmac. Planning permission expires in 2019 and therefore limited time for applicant to extract mineral prior to expiration. In any event, the site is not available for acquisition.</td>
</tr>
<tr>
<td>9</td>
<td>Ruthin</td>
<td>Inactive</td>
<td>Site owned by Tarmac. Last worked in 1986. Unavailable for acquisition.</td>
</tr>
<tr>
<td>10</td>
<td>Comeston Quarry</td>
<td>Inactive</td>
<td>Quarry is flooded to depth and is now included within Cosmeston Country Park and Southerndown Road has been used as a waste disposal site.</td>
</tr>
</tbody>
</table>

**Table 2.1: Alternative sites considered**
2.2 **Alternative Design Elements Considered**

Throughout the production of the planning application and ES several alternative approaches and designs have been considered regarding the proposed extension areas.

**Option 1: Maximising depth of extraction**

The Applicant had initially sought to consider maximising the depth of extraction across both the existing and proposed extension area. The result would have been that the entire application site was worked to a maximum depth of 25m AOD. Whilst this would be technically possible, following consultation with the hydrogeologist, it was concluded that working above the water table would reduce the potential impacts upon water features and allow a more beneficial restoration scheme to be delivered.

**Option 2: working to eastern boundary of eastern field of proposed extension area**

The applicant also considered extending workings to the eastern-most perimeter of the eastern field of the extension area. Following consultation with the landscape and visual impact consultant, it was concluded that creating a stand-off between the working face and the eastern boundary, would allow for a screening bund to be erected and advanced landscaping, thereby further reducing the visual impact of the site.
Option 3: Limited Restoration of existing Quarry

Consideration was given to an option whereby the existing quarry would only be partially restored. The main driver for this option was a limited supply of material from the existing site and proposed extension area which would be used in the restoration of the site. This option left much of the existing quarry floor un-restored. The option also would not allow for much of the existing high faces to be buttressed. The southern face of the existing quarry would only be partly buttressed under the option. As a result of this option, this part of the site would not be restored to beneficial agricultural use. The option was considered contrary to planning policy and therefore not pursued. The option is shown in Figure 2.1 below.

Figure 2.1: Limited Restoration of existing quarry design option
Option 4: Restoration of all faces

Consideration was given to an option whereby the existing quarry would only be partially restored. The option would see all faces at the site restored with overburden and soils removed from the extension area and supplemented with soil making material from the recycling business at the site. This option would require in the region of 480,000 tonnes of material to deliver. Whilst the option would allow for the existing high faces to be buttressed and the site to be restored to beneficial agricultural use, the traffic generated by importing the material was considered likely to have a potential to impacts upon the local highways network. As a result, the option was not pursued. The option is shown in Figure 2.2 below.

Figure 2.2: Restoration of all faces quarry design option
Option 5: Restoration to Original Ground levels

A design was also considered which would see the site restored to original ground levels following the completion of mineral extraction. Whilst the option would allow for the site to assimilate back in to the surrounding landscape, a significant amount of material (in the region of 2.5 million tonnes) would be required in order to deliver the option. Such an option would attract significant highway movements. Doubts over the availability of such quantities of material where also expressed. As such, it was considered that this would not be a sustainable option. The option is shown in Figure 2.3 below.

Figure 2.3: Restoration to Original Ground levels quarry design option

Option 6: Agreed and submitted Option

Following considerations of the alternative options described above, and following pre-application consultations, it was considered that the extraction area should extend to the east of the existing quarry, with a circa 30m standoff between the final face position and the eastern most boundary. It was also
decided that the proposed extension area would only be worked to a maximum level of 46m AOD. Therefore, avoiding the need to de-water the quarry.

The restoration proposals for the site would utilise soils and overburden removed from the extension area in order to buttress the existing high faces in the existing quarry which are currently deemed a “Significant Hazard” under the Quarries Regulations 1999 legislation. The buttressing will result in 1:3 slopes so as the site will be suitable for agricultural use. The restoration landforms would be supplemented with soil making materials from the existing permitted recycling operation. The existing quarry floor and that of the extension area would be ‘topped’ with top soil.

The faces within the proposed extension area will be retained as they have been designed to be lower than the existing faces and therefore constitute a non-significant hazard. The proposed restoration would deliver a beneficial afteruse as well as geodiversity and biodiversity improvements.

A copy of the proposed development plans are available at Appendix 2.1.

2.3 Pre-Application Consultation

A request for pre-application advice was made to VoGC in September 2017. A copy of the request is appended at Appendix 2.2. Guidance was obtained from the Vale of Glamorgan Council in the form a written pre-application response dated 20th April 2018. A copy of the response is provided at Appendix 2.3.

A pre-application meeting was also held on-site between the Vale of Glamorgan and Carmarthenshire County Council officers, the applicant and the applicant’s geology and planning consultants (Quarrydesign and Quarryplan).

A number of issues were discussed at the meeting, including relevant development plan policies, information required to accompany a planning
application, the current status of the local aggregate landbank and the mechanism required to ensure the existing permission is relinquished.

2.4 **Scope of the Environmental Impact Assessment**

Section 4(2) of the regulations requires environmental impact assessments to identify, describe and assess in an appropriate manner, the direct and indirect significant effects of proposed development on the following:

- population and human health;
- biodiversity
- land, soil, water, air and climate;
- material assets, cultural heritage and the landscape; and
- the interaction between the factors.

This ES for the proposed development considers the potential significant effects and consequences on the environment of the development and assesses whether such effects are:

- Direct or indirect;
- short, medium or long-term;
- reversible or irreversible;
- beneficial or adverse.

Where significant adverse effects are identified a description of the measures necessary to avoid, reduce or remedy these effects is provided (mitigation measures).

To determine the environmental aspects that should be addressed within this ES, each of the main activities within the development were examined and potential impacts arising from those activities were identified, together with receptors of any such impacts. The main site activities, impacts and receptors are all identified within Table 2.2 overleaf.
<table>
<thead>
<tr>
<th>Proposed Activity</th>
<th>Potential Source of Impact (alphabetical order)</th>
<th>Potential Receptors (Alphabetical Order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overburden stripping, construction of lagoon system and water management system and pre-emptive screening.</td>
<td>Land Use, Dust, Noise, Visual</td>
<td>Agriculture, Humans, Archaeology, Landscape</td>
</tr>
<tr>
<td>Mineral extraction, soil removal, extraction and transportation to processing plant</td>
<td>Land use, Dust, Visual, Noise</td>
<td>Agriculture, Air Quality, Archaeology, Ecology, Humans, Landscape, Water Environment</td>
</tr>
<tr>
<td>Transport to and from site</td>
<td>Traffic</td>
<td>Humans</td>
</tr>
<tr>
<td>Restoration and afteruse</td>
<td>Land use, Visual</td>
<td>Landscape, Ecology, Humans, Agriculture, Water Environment</td>
</tr>
</tbody>
</table>

**Table 2.2: Site Activities, Impacts and Receptors**

From the identification of potential impacts and receptors, a scoping matrix has been compiled which gives a clear indication of the main impacts to be assessed within this ES. The scoping matrix is set out overleaf in **Table 2.3** and has been prepared taking cognisance of pre-application discussions with the Council.
Separate reports have been prepared for each of the significant elements by specialist consultants. Each report considers the following:

- baseline study;
- identifying potential impacts
- predicting and evaluating the magnitude and significance of impacts;
- proposing mitigation measures.

The remit of an ES is to consider all environmental aspects, which could experience impact from the proposed development, from which the identification of mitigation measures can be undertaken.

The purpose of the mitigation measures is to ensure that the development could be undertaken without creating any significant or unacceptable adverse impacts on the environment or amenity of the area.

An EIA Screening and Scoping Opinion was requested from the Planning Authority under Regulations 6(1) and 14(1) of the 2017 Regulations, to
determine whether an EIA is required for the proposal and if so, the scope and level of detail and information which is to be provided in the ES.

A response was received from the Council, dated 30th July 2018 which states that:

“Having regard to the key issues identified in Schedule 3 of the 2017 Regulations and WO Circular 11/99, the Local Planning Authority is of the view that the characteristics, location and any potential impact of the development as outlined in the supporting documentation is not likely to be significant upon the environment for the reasons identified in the screening opinion attached.

Accordingly, there is not considered to be a requirement for a formal Environmental Impact Assessment to be submitted under the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017”.

Notwithstanding, this ES has been prepared in order to assist the Council in the determination of the application and allow them to fully consider the potential impacts of the proposals and the likely effects upon the environment.
3.0 **PLANNING POLICY FRAMEWORK**

Under Section 38(6) of the Planning and Compulsory Purchase Act 2004, planning applications must be decided in accordance with the adopted Local Development Plan unless material considerations indicate otherwise. Planning Policy Wales, Section 3.1 “Taking Planning Decisions” gives more detail on material considerations.

In this instance, the statutory development plan is comprised of the Vale of Glamorgan Local Development Plan (June 2017). Other material policy considerations include Planning Policy Wales (Edition 10, December 2016) and relevant Technical Advice Notes and supplementary planning guidance.

3.1 **Vale of Glamorgan Local Development Plan**

The Local Development Plan (LDP) was adopted in June 2017 sets out the vision, objectives, strategy and policies for managing development in the Vale of Glamorgan. The existing quarry is identified on the adopted Proposals Map as a ‘Quarry Site’, for which policies SP9 and MG23 are applicable. A ‘Quarry Buffer’ is also displayed around the existing site on the Proposals Map, for which policies SP9 and MG23 are applicable.

The adopted Proposals Map also shows that the existing site and proposed extension area, is located within an area of mineral safeguarding for limestone, for which Policies SP9 and MG22 are applicable.

An extract from the adopted Proposals Map is provided at **Figure 3.1** overleaf.
Policy SP9 states:

“The local and regional need for the provision of a continuous supply of minerals will be achieved through:

1. Maintaining a minimum of 10 years land bank of hard rock throughout the plan period; including extended time periods to complete permitted extraction at existing sites;
2. Favouring proposals which promote the sustainable use of minerals and encourage the use of secondary and alternative resources;
3. The safeguarding of known resources of sandstone, limestone, sand and gravel (where these occur outside settlements), from permanent
development that would unnecessarily sterilise them or hinder their future extraction; and
4. Safeguarding wharf facilities for the landing of marine dredged sand & gravel”.

The policy requirement for a minimum of 10 years land bank of hard rock throughout the plan period stems from the Regional Technical Statement (RTS), a requirement of Minerals Technical Advice Note 1: Aggregates (MTAN1²). This statement recommends that the future quantities of aggregate which need to be provided for, from each Local Planning Authority is calculated over 25 years for crushed rock (LDP period plus 10 years).

Each year, the South Wales Regional Aggregate Working Party (SWRAWP) co-ordinates the aggregate sales information received from all mineral operators via the eighteen local planning authorities which make up the South Wales region. The collated information makes a significant contribution to the ongoing study of supply and demand patterns. The most recent report is for the 2016 calendar year and was published in 2018.

The report describes how sales in South East Wales increased by 430,000 tonnes in 2016 compared to 2015, with 400,000 tonnes being provided from Bridgend/Cardiff/Vale of Glamorgan and 30,000 tonnes being provided from elsewhere in the South East region. There was a similar increase of 410,000 tonnes in 2015 compared to 2014 and may indicate sustained improvement in economic growth and business confidence within the South East Wales Region.

Landbank figures have been calculated according to the method set out in MTAN 1(Wales) – March 2004, i.e. they have been calculated using the average of the last three years sales. The figures show that the Vale of Glamorgan has a landbank of some 32 years based upon 3 years sales average. This figure has reduced from the figure calculated in 2015 of 47 years

² issued by the Welsh Government in March 2004
to 32 years calculated in 2016. This is primarily due to production in 2016 being significantly higher than the production in 2013 (the year that it replaces in the 3-year average calculation).

The Regional Technical Statement 1st Review (published August 2014) deemed it prudent to consider a 10-year average as providing a more reliable baseline than a 3-year average. Based on a 10-year sales average, the SWRAWP calculates there to be a 28-year landbank in the Vale of Glamorgan.

Cardiff and the Vale of Glamorgan where the only Local Authority areas where the landbank increased despite recovering sales. The reason behind this variation is that the sales in 2016 were still lower than in 2006 (the year it replaced in the 10-year average calculation).

The LDP identifies the following active mineral working sites in the Vale of Glamorgan (or inactive sites where future working is considered likely to occur):

1. Aberthaw - Liassic
2. Ewenny - Carboniferous
3. Forest Wood - Carboniferous (Shared with Rhondda Cynon Taf)
4. Pant - Carboniferous
5. Pantyffynnon - Carboniferous
6. Longlands - Carboniferous
7. Lithalun - Carboniferous
8. Wenvoe - Carboniferous
9. Garwa Farm * - Carboniferous
10. Ruthin *- Carboniferous

* Currently inactive but held in reserve

As of the time of writing, the majority of the sites named above are owned and operated by national operators. Of those named above, the following sites are currently not operational:
2. Ewenny - Carboniferous
4. Pant - Carboniferous
9. Garwa Farm * - Carboniferous
10. Ruthin *- Carboniferous

With a number of the sites not operational, in order to ensure the steady and adequate supply of mineral it is considered beneficial to have a supply from a range of operators- including the small and medium sized operators, as opposed to the supply being dominated by the large operators with a number of sites within the Authority area in whose interest it may be to restrict supply in the local market, and as a result, increase demand and therefore prices.

The proposed development will ensure that the local landbank includes sites such as the applicants can contribute towards delivering a proven and viable landbank, providing an adequate supply of mineral that society needs now, and at prices that are reasonable.

Given the significant reduction in the landbank as detailed in the SWRAWP Report, combined with an increase in sales and an improvement in economic growth and business confidence, it is considered that small and medium sized operations such as that proposed at Longlands is required to ensure a steady and reliable supply of mineral at reasonable prices.

The development at Longlands will allow for the continued supply of material to the market. The site is owned and operated by a single operator (the applicant) and therefore, the supply of material from the site is essential in order to ensure that business continues to operate. The proposed development will therefore provide satisfy the Council that the land bank can be maintained and that the site will actively contribute towards the supply of mineral in the Authority area, as opposed to lying dormant.

The policy also states that a continuous supply of minerals will be achieved through favouring proposals which promote the sustainable use of minerals. As
demonstrated throughout this ES, the proposed development would not result in any significant effects upon the environment. The proposed development would generate a number of benefits including a holistic restoration scheme, reduced likelihood of impacts upon water features and a range of other social and economic benefits. The development is therefore considered to result in a sustainable use of the mineral.

Given the above, the proposed development is considered to accord with Policy SP9 of the LDP.

Policy MG23 states:

“Buffer zones have been identified around mineral working sites. Within buffer zones proposals for new development will only be permitted where it is demonstrated that:

1. The proposal would not constrain the operations of the mineral site; or
2. The proposal is located within an existing built up area which already encroaches into the buffer zone”.

The policy relates to other land uses which may conflict with minerals workings or which may constrain the ability of the mineral to be worked. The extent of the buffer zone is based on standard national guidance contained in MTAN1 which is 200 m for hard rock quarries. There would be no sensitive receptors or other conflicting land uses within the buffer zone resulting from the proposed development. As a result, the proposed development is considered to accord with Policy MG23.

Policy MG22 relates to development in mineral safeguarding areas. The aim of the policy is to avoid sterilisation of mineral. The proposed development seeks permission to extract the mineral and therefore, the policy is not considered applicable.
Policy MG25 relates to mineral working in general and states that:

“Proposals which prioritise the use of recycled material and secondary aggregates before new sources of primary materials are developed will be favoured where this does not have an unacceptable effect on amenity or the environment. Proposals for the extraction of new primary minerals will only be permitted where there is a proven national, regional or local need for the mineral and where:

1. Any adverse impacts on the natural environment are avoided or mitigated to an acceptable level, and proposals include, where appropriate, measures to enhance the natural environment;

2. Impacts on built and cultural heritage are mitigated to an acceptable level and enhanced wherever possible;

3. Impacts on the amenity of local residents and local communities are not unacceptable, in particular with regard to noise, health, air quality, vibration, visual impact, access provision and traffic generation;

4. Impacts on geology, hydrology and hydrogeology, including land stability and water supplies, are acceptable;

5. There is clear evidence that there will be no unacceptable loss of agricultural land of ALC grade 1, 2, and 3a;

6. Minerals are transported by the most sustainable means and the potential for minerals to be transported by means other than by road has been adequately assessed;

7. There is provision for the land to be progressively and finally restored to a high standard and to a beneficial and sustainable after-use including long term post-closure management; and
8. Where opportunities for the re-use and recycling of mineral waste have been considered and where there are no practicable substitute materials that can be provided at less environmental costs.”

Each of the criteria are considered in further detail below.

Proposals for the extraction of new primary minerals will only be permitted where there is a proven national, regional or local need

As described earlier in this chapter, there is considered to be a proven need for the mineral as it has been proven that demand is increasing, whilst the supply of mineral within the Vale of Glamorgan Authority area is constrained largely by national operators, with a number of the sites currently not being worked and others whose planning permission has either expired or is about to expire.

The applicant is a single small/medium scale operator, whose business relies upon extracting mineral in order to operate. The proposed development will provide a steady and reliable supply of aggregate to market. In granting the proposed development, the Council can be satisfied that the contribution that the site makes to the land bank can be maintained and that the site will continue to actively contribute towards the supply of mineral in the Authority area, as opposed to be one of many quarries operated by a national operator which could lie dormant and not make any viable to realistic contribution to the landbank.

Any adverse impacts on the natural environment are avoided or mitigated to an acceptable level, and proposals include, where appropriate, measures to enhance the natural environment.

The application site consists of an existing, working quarry and agricultural fields and therefore has been assessed to be of low value for ecology. As demonstrated at Section 8 of this ES, subject to the implementation of mitigation
measures, the proposed development would not result in an adverse impact upon the natural environment.

*Impacts on built and cultural heritage are mitigated to an acceptable level and enhanced wherever possible*

As demonstrated in Section 12 of this ES, having regard to the baseline conditions, the nature of the proposed development and the proposed measures that would be effective in mitigating the impacts of the scheme, there would be no significant residual effects upon known cultural heritage assets.

*Impacts on the amenity of local residents and local communities are not unacceptable, in particular with regard to noise, health, air quality, vibration, visual impact, access provision and traffic generation*

As demonstrated at Sections 7, 9, 10 and 11 of this ES, the proposed development would not result in any unacceptable impacts upon amenity.

In terms of dust and noise, with the implementation of control mechanisms and the exercise of reasonable engineering control over general site operations, it is considered that there are unlikely to be any significant or unacceptable adverse impacts at sensitive premises in the surrounding area.

In terms of visual impact, subject to the implementation of mitigation measures including advanced tree planting and the erection of screening bunds, the proposed development is not considered to pose an unacceptable visual impact upon sensitive receptors or viewpoints in the surrounding area.

In terms of highways impacts, no intensification is proposed within the proposals. The existing planning permissions at the site currently have a number of conditions attached which control and limit the highways impacts of the site. As a result, the proposed development is not considered to pose an unacceptable impact in terms of the convenience or safety of highways users.
Impacts on geology, hydrology and hydrogeology, including land stability and water supplies, are acceptable

As detailed in Section 5, the development plans for the site have been prepared by a suitably qualified geo-technical engineer, following geotechnical analysis of the site. The proposed designs are compliant with relevant quarry regulations and health and safety legislation.

An assessment of hydrology and hydrogeology has also been undertaken by a suitably qualified hydrogeologist. The findings of the assessment are discussed in Section 6, with the conclusion that the proposed development would not result in an unacceptable impact upon hydrology, hydrogeology or water supplies.

There is clear evidence that there will be no unacceptable loss of agricultural land of ALC grade 1, 2, and 3a;

The application site consists of an existing quarry and circa 6 ha of agricultural land, used for grazing. As detailed at Section 13, at worst, the loss of land would result in only a minor adverse impact. Presently, extraction at the existing site is permitted to a maximum depth of 25m AOD, resulting in the restoration including a water body. The restoration proposals for the site will see a holistic restoration of the entire site to beneficial agricultural use. Given the above, the loss of the temporary loss of agricultural land at the application site is not considered to significant.

Minerals are transported by the most sustainable means and the potential for minerals to be transported by means other than by road has been adequately assessed

The existing planning permission for the site includes a number of conations which controls highways movements associated with the quarry. This planning
application does not propose any intensification to the levels and requirements specified in the existing conditions. Given the location of the site, and that minerals can only be worked where they are found, there are not considered to be any other means of transport other than movement by HGV, which would be suitable for the site. As a result, minerals are considered to be transported by the most sustainable means as a result of the proposals.

*There is provision for the land to be progressively and finally restored to a high standard and to a beneficial and sustainable after-use including long term post-closure management*

As described in Section 9 and as shown in the accompanying Restoration Proposals, the proposed development allows for the progressive restoration of the site. In order to deliver a beneficial afteruse, restoration landforms will be supplemented with inert materials resulting from the existing recycling business operating at the site. As well as delivering biodiversity improvements and achieving a beneficial afteruse, the proposed restoration proposals will provide an important facility for the deposition of inert soil-making obtained from material resultant from local construction projects.

*Where opportunities for the re-use and recycling of mineral waste have been considered and where there are no practicable substitute materials that can be provided at less environmental costs.*

The permitted recycling business at the site will continue to operate from the site and will be unaffected by the proposed development. The operation will continue to provide an important local service.

Those other LDP policies of relevance to the proposed development are considered in brief below.

Policy SP10 relates to the built and natural environment. The aim of the policy is to ensure that development proposals preserve and where appropriate
enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan. As demonstrated at Sections 8, 9 and 12 of this statement, the proposed development is not considered to pose an unacceptable impact upon the natural or built environment.

Policies MG19, MG20 and MG21 seek to protect sites and species of European importance, nationally important sites and species and sites of importance for nature conservation. As demonstrated in Section 8, the proposed development would not result in any unacceptable impacts upon designated sites.

Policy MD1 relates to the location of new development. The aim of the policy is to restrict development to focus development to parts of the Council area which are the most sustainable. Given that minerals can only be worked where they are found and that the development proposals take the form of an extension to an existing site, much of the provisions of the policy are not considered to be applicable. However, as demonstrated throughout this statement, the development proposals would not result in an unacceptable impact upon the countryside, would not impact unacceptably upon amenity, would not result in unacceptable highways impacts and would provide a positive context for the management of the water environment.

Policy MD2 relates to the design of new development. The aim of the policy is to create high quality, healthy, sustainable and locally distinct places. As detailed in Section 4 of this statement, the site has been designed in order to be sustainable and have the least impacts possible.

Policy MD7 relates to environmental protection. The aim of the policy is to ensure that will not result in an unacceptable impact on people, residential amenity, property and / or the natural environment. As demonstrated throughout this statement, the proposed development would not result in an unacceptable impact upon amenity or the natural environment.
Policy MD8 relates to the historic environment and states that development proposals must protect the qualities of the built and historic environment of the Vale of Glamorgan. As demonstrated at Section 12, the proposed development would not result in an unacceptable impact upon cultural heritage assets.

Policy MD9 relates to biodiversity and states that new development proposals will be required to conserve and where appropriate enhance biodiversity interests. As demonstrated at Section 8, the proposed development would not result in an unacceptable impact upon biodiversity.

Given the above, the proposed development has been demonstrated to accord with the provisions of the LDP.


Planning Policy Wales (PPW) (10th Edition) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes. Section 5.14 of the document relates specifically to minerals.

Paragraph 5.14.1 describes how construction related minerals and mineral products are particularly important in Wales and are essential for housing and infrastructure, such as schools, roads, railways, airports and flood defences and a steady and adequate supply of materials is necessary. Paragraph 5.14.22 reiterates this point, stating that it is essential to the economic health of the country that the construction industry is provided with an adequate supply of the minerals it needs.

Paragraph 5.14.4 describes how minerals working is different to other forms of development in that extraction can only take place where the mineral is found to occur, and it is transitional and cannot be regarded as a permanent land use even though operations may occur over a long period of time.
The paragraph states that when operations cease land needs to be reclaimed to a high standard and to a beneficial and sustainable after-use.

Paragraph 5.14.15 relates to landbanks for aggregates and states that for the purposes of commercial stability, the aggregates industry requires a proven and viable landbank.

As described at Section 3.1, there are a number of sites within the council area that are not operational. In order to ensure the steady and adequate supply of mineral it is considered beneficial to have a supply from a range of operators—including the small and medium sized operators, as opposed to the supply being dominated by the large operators with a number of sites within the Authority area in whose interest it may be to restrict supply in the local market, and as a result, increase demand and therefore prices.

The proposed development will ensure that the local landbank includes sites such as the applicants that can contribute towards delivering a proven and viable landbank, providing an adequate supply of mineral that society needs now, and at prices that are reasonable.

Paragraph 5.14.39 states that Planning authorities and the minerals industry should take into account the need to protect the quantity and quality of surface and groundwater supplies. As demonstrated at Section 6 of this ES, the proposed development would not result in an unacceptable impact upon the water environment.

Paragraph 5.14.41 describes how in addition to Agricultural Land Classification grade, other agricultural factors should be taken into account when appraising the full extent of mineral working, restoration and aftercare proposals. The objective should be, wherever possible, to minimise any adverse effects on agriculture occurring as a result of mineral development.
As demonstrated throughout various sections of this ES, the proposed development would not result in an unacceptable impact upon soils or agricultural land. The site will be restored to a beneficial agricultural use.

Paragraph 5.14.42 states that mineral workings should not cause unacceptable adverse environmental or amenity impact. As demonstrated in various sections of this ES, the proposed development would not result in an unacceptable impact upon amenity by virtue of noise, dust or visual impact.

Paragraphs 5.14.47 and 5.14.48 relate to proposals for extensions to mineral workings, stating that extensions should be considered in the same manner as applications for new sites and each application will need to be considered on its own merits.

Paragraph 5.14.48 does however state that:

“The presence of an existing quarry should be a material consideration when considering a proposal for an extension. There may be benefits to extending a site in terms of shared infrastructure, for instance, as opposed to working a new greenfield site”.

Paragraph 5.14.50 relates to restoration and aftercare and states that unless new mineral extraction provides satisfactory and suitable restoration, planning permission should be refused. As shown on the accompanying plans and detailed at Section 9 of this ES, the proposed development will be restored to a beneficial agricultural use.

Given the above, the proposed development has been demonstrated to accord with the provisions of PPW.
4.0 PROJECT SUMMARY AND OBJECTIVES

This Environmental Impact Assessment considers the environmental aspects within and around the proposed lateral extension of Longlands Quarry and the progressive restoration of the existing site. The quarry is an operational quarry extracting carboniferous limestone.

4.1 Site Location and Extent

The site is located at Longlands Quarry, approximately 3.2km to the south east of Bridgend. Access to the site is via the B4524 Corntown Road. The site is located in a rural setting and is surrounded by agricultural fields to the east, south and west. The site is bound to the north by the B4524 Corntown Road, which provides access to the site. Beyond the road to the north lies further agricultural fields.

There are few sensitive receptors within the locality with the nearest residential property in excess of 300m from the southern boundary of the site at Corntown Farm.

The topography of the site increases from north to south, varying from approximately 51m AOD along the northern boundary of the proposed extension area to 67m AOD at the southern boundary.

The planning application boundary covers the existing planning permission area and the proposed 7.2ha extension area, to the east of the existing quarry. During a recent planning application to discharge Condition 19 of the planning permission (2017/00103/1/CD), it was brought to the applicant’s attention that the planning permission boundary in the southern part of the site does not extend to the field boundary. As such, the planning application boundary proposed within this application extends to the southern field boundary.
4.2 Planning History

The first planning permissions for the site date back to the 1950’s where permission was granted for quarrying activities under references S/665 (granted March 1950); S/12391 and S/13295 (both granted Feb 1958) and S/14052 (granted Dec 1959).

Modern working conditions were imposed at the Quarry in a Review of the Mineral Permission (ROMP), which was issued in June 1998 (Application Ref 1997/01242/FUL).

The permission and the conditions attached to it, have subsequently been amended a number of times, under Section 73 of the Town and County Planning Act 1990. The most recent application at the site (Ref 2017/00103/FUL) was for the removal of Condition 25 of the original consent (as amended).

Under planning law, permissions granted under Section 73 of the Act are considered to be standalone permissions, as such the current planning permission for extraction at the site is Planning Permission Ref 2017/00103/FUL.

Condition 3 of the permission states:

“No excavation shall take place below a level of 40 metres above Ordnance Datum except in accordance with the scheme of groundwater monitoring and mitigation approved on 30th October, 2002, and no excavation shall take place below a level of 25 metres above Ordnance Datum until a further scheme including a detailed assessment of quarry dewatering on the features identified in the water features survey submitted with the application for the determination of new working conditions in December 1997, and seasonal high and low groundwater data from boreholes that provide representative water levels within the Carboniferous limestone within which the quarry is situated and proposing:
a) measures for the monitoring of ground water throughout the duration of mineral extraction below 25 metres AOD; and

b) mitigation measures to be taken should any depletion or derogation occur to the aquifer, has been submitted in writing to and approved in writing by the Mineral Planning Authority.

Reason: In order to protect ground water resources”.

Subject to providing detailed assessments of quarry dewatering on water features, extraction is permitted at the site to a maximum depth of 25m AOD. The existing quarry floor varies in depth between c41m AOD and 46m AOD. This planning application seeks permission to extend the existing workings to the east of the permitted extraction area. The development will see the relinquishing of (conditionally) consented mineral reserves below lowest current quarry floor level of 40maOD in exchange for a lateral extension with its deepest sinking at 46maOD.

As a result of the proposed development, the applicant would be prepared to relinquish working to a maximum depth of 25mAOD in the existing quarry as permitted via Condition 3 of 2017/00103/FUL.

Given the relationship between the existing quarry and the proposed extension and that the proposed development will, in effect, result in a new composite planning permission for the entire site, the planning application area includes the existing planning permission areas and the proposed extension area.

Condition 1 of the permission states that no operations authorised by the permission shall take place after 22nd February 2042. There is no intention to increase the lifespan of the quarry beyond that currently permitted.
Reference is made to the existing conditions attached to the permission in various sections of this Statement. In short, the proposed development seeks no intensification over and above that already permitted at the site and seeks to operate in accordance with the existing conditions for the site.

Planning permission was also granted at appeal for an inert recycling centre at the site (Planning Application Ref: 1998/00019/FUL).

The permission is time limited to coincide with the end date for mineral extraction at the site (February 2042). The permission is also linked to the mineral extraction permission in terms of joint restrictions on vehicle movements, operating hours and the requirement for best practice measures and management systems to be in place.

No changes are proposed to this permission and it is proposed that it remains unaffected as a consequence of this planning application.

4.3 **Site Operations**

Carboniferous limestone is currently extracted from at the site via drill and blast methodology. The limestone is crushed and screened using mobile plant and machinery on-site. Stockpiles of graded material is stored in the quarry floor. The processed material is transported off-site via 20 tonne eight-wheeled HGV’s.

The site also includes an inert recycling operation, whereby building and demolition waste is screened and crushed to produce secondary aggregates which are transported off-site.

Workings to date, have resulted in a quarry floor to a depth of between 41mAOD at the western end and 46mAOD at the eastern end. The applicant has not yet proceeded to further deepen the quarry to its maximum permitted limit which would provide a further two benches.
The hours of operation at the site are controlled via condition 16 attached to planning permission 2017/00103/FUL. The conditions states that no operations other than maintenance shall be carried out except between 0700 and 1800 Monday to Friday and 0700 and 1300 on Saturdays. No operations other than maintenance are permitted on Sundays or Bank Holidays. No alteration is proposed for the extended operation from that of the existing, approved operating hours.

4.4 Proposed Development

Planning permission is sought for a proposed lateral extension to the east of the existing Longlands Quarry. The proposed extension area would be worked to a depth of 46m AOD to match the existing floor level at the eastern end of the quarry floor. As part of the proposals, the applicant would be prepared to relinquish permitted reserves at depths below the existing floor in favour of the lateral eastern extension, as proposed. A full copy of the proposed development plans are held at Appendix 2.1 of Volume II.

The existing quarry workings and related quarry infrastructure would be retained as part of the proposals. The workings are restricted in depth by conditions attached to previous planning permissions at the site, (specifically Condition 3 of Planning Permission Ref 2017/00103/FUL). The condition states that excavation may be taken to a depth of 25m AOD, after which a detailed assessment of dewatering is required.

The proposed development is seeking to reduce the depth at which mineral is extracted across the existing site, with the relinquishing of (conditionally) consented mineral reserves below lowest current quarry floor level of 40maOD in exchange for a lateral extension with its deepest sinking at 46maOD.

The accompanying plans demonstrate how the site will be worked in phases.
One advantage of this approach is that it avoids the requirement for dewatering at the site. Presently, extraction in the existing site is above groundwater level. By extending the existing quarry laterally, rather than deepening, as is currently permitted, there will be no need to work below the water table, negating the need to artificially suppress the groundwater table (via pumping) and therefore reducing any potential impacts of the site impacting local ground water sources. Further detail on the impacts of the proposed development upon the water environment is provided at Section 6.0.

As a result of relinquishing the existing, permitted mineral at depth in favour of a lateral extension, there would be no need to work below the water table and therefore would be no requirement for a permanent water body as part of the restoration proposals. If extraction at the existing site were to continue, as is currently permitted, the void created would result in a permanent waterbody following the completion of operations and the cessation of de-watering. The waterbody would require maintenance and upkeep.

The proposed development would allow the existing and proposed extension site to be returned to a beneficial after-use. By allowing for a ‘dry’ restoration proposal, it will provide the operator and Planning Authority greater flexibility as to the site’s end use. It is proposed that the site is restored low level agriculture to match the surrounding land use proposed.

### 4.4.1 Advance Planting

Tree planting is proposed along the northern and eastern boundaries at the earliest opportunity. The proposed planting will provide further screening of the site and will mitigate against visual impacts of the extension site.

### 4.5 Progressive Phasing and Restoration

The accompanying development plans will begin following the completion of the extraction of limestone to a maximum level of 40 mAOD in the existing...
quarry site. The development plans show working an eastern extension to a maximum depth of 46m AOD, in order to match that of the existing quarry. The proposed workings obviate the need to work limestone below groundwater level and will generate above water table reserves of 1.97m tonnes of limestone.

4.5.1 Phase 1

Phase 1 extends eastwards into the northern and eastern most fields. Stripping the whole of this Phase generates 27,100m³ of overburden (topsoil and weathered ‘top-rock’) and enables the creation of a north eastern screening bund. The bund is a minimum of 3m high and a maximum of 6-8m high (depending on whether the outer slope height or inner slope height is measured). It has an internal slope angle of 1:1½ and an outer slope angle of 1:3. It is to be constructed with 22,200m³ comprising an inner core of weathered ‘top-rock’ covered with topsoil and tree planted.

The remaining 4,900m³ will be placed into the Western Tip against the western quarry face with an inner core of weathered ‘top-rock’ and covered with topsoil. The outer slope will be 1:3. The southern and western hedges of the extension area will be ‘thickened’ with additional hedge planting.

Phase 1 enables the splitting of the existing high southern face into an upper 13m high face and a lower 12m high face. Due to the eastward fall of the land, the eastern limit of extraction was taken as the 54m contour to ensure that the bottom face is no lower than 7m high (accounting for 1m of overburden). Drill rig and light vehicle access is retained around the western and southern perimeter of the site and a 15m haul road to access the upper face is created along the north eastern side of the quarry.

Phase 1 will produce 232,300m³ of limestone equivalent to 604,000 Tonnes.
4.5.2 Phase 2

Phase 2 will require the removal of 32,100 m$^3$ of overburden (comprising topsoil and weathered ‘top-rock’). Unlike Phase 1, this will be stripped in a series of campaigns as the quarry faces develop southwards. The weathered ‘top-rock’ will form the core of an extending Western Tip and will be covered with topsoil.

The two quarry faces (58m AOD and 64m AOD) will be developed southwards. Due to the eastern fall of the land, the upper face will peter out to the east at the 58m AOD contour. Once the quarry faces reach their southern limit, the 15m wide north eastern haul road will be reduced to 10m wide.

Phase 2 will produce 528,100 m$^3$ of limestone equivalent to 1,373,100 Tonnes.

4.6 Restoration

A restoration scheme has been produced by David Jarvis Associates and is appended at Appendix 4.1. It is proposed that the site will be progressively restored to low level agriculture. For example, overburden removed from Phases 1 and 2 will be used to restore the western and southern faces of the existing quarry site.

At present, the existing southern and western faces of the quarry are deemed a “Significant Hazard” under the Quarries Regulations 1999 legislation. It is proposed to restore these faces to a gradient of 1:3 so as they can be made safe and utilised for low level agriculture. It is anticipated that soils derived from the on-site ancillary recycling business will be used to aid the restoration of the quarry benches and the floor of the quarry.

The specifics of the restoration scheme may vary dependent on the volume of soil making material available. Therefore, a concept restoration is provided and it is proposed that the specifics of the restoration proposals are agreed with the
MPA at regular intervals, as is current practice, with quarry development plans required by Condition 19 of planning permission 2017/00103/FUL.

The attached indicative Restoration Concept Drawing is provided to allow the concept to be agreed so as restoration may commence at the earliest opportunity. It is proposed that the existing site is progressively restored as the extension area continues to be worked, allowing the site to be returned to agricultural use and delivering biodiversity improvements at the earliest opportunity.
5.0 **GEOLOGY**

5.1 **Author of the Report**

The assessment of the proposed development upon the geological setting has been prepared by Quarrydesign Ltd, which is a leading geological and geotechnical consultancy. Quarrydesign provide a range of services to the minerals industry including quarry design and development services and geotechnical assessment.

5.2 **Introduction**

Quarrydesign have been appointed to assess the potential impacts from the proposed development upon the geotechnical setting of the area. The accompanying development plans have been prepared by Quarrydesign and applicant currently employs Quarrydesign to undertake geotechnical assessment works in line with the requirements of Quarries Regulations.

The following assessment has been undertaken by Adrian Wilkinson of Quarrydesign. Adrian is an engineering geologist with over 26 years quarrying industry experience undertaking site investigations and producing quarry development plans. He is a Chartered Geologist and Fellow of The Geological Society of London, a Member of the European Federation of Geologists, a Fellow of the Institute of Quarrying and a Member of the Irish Mining and Quarrying Society. He holds an honours Degree in Applied and Environmental Geology awarded from the University of Birmingham in 1993 and a Post Graduate Diploma in Applied Geotechnics awarded from Camborne School of Mines in 2011.
5.3 **Geological Setting**

Longlands Quarry is covered by the British Geological Survey (BGS) 1:50,000 scale map number 262 ‘Bridgend’, an extract of which is shown in **Figure 5.1** below.

![Regional Geology](image)

**Figure 5.1:** Regional Geology (Solid and Drift), BGS 1:50,000 scale Sheet 262 (Not to Scale).
The BGS ‘Solid and Drift’ Geology Map for the site (Figure 5.1) indicates that the majority of Longlands Quarry is located within Dolomitisied Friars Point Limestone, which forms the top of the Black Rock Limestone Group of the Lower Carboniferous Period. The western and north-western margins of the site are located within the unconformable marginal facies of the Lower Lias of the Lower Jurassic Period.

The BGS describe the Black Rock Limestone Group as, “Dark grey or black limestone with abundant crinoids’ remains. Thin shale beds occur in the lower and middle parts of the succession. Parts of the Black Rock Limestone have been altered to dolomite during burial of the succession. Apart from crinoids, corals and brachiopods are especially common, and different varieties of these occur at different levels through the formation.”

The top of the Black Rock Limestone Group [Friars Limestone] is described by M. R. Leeder of the Geological Society as “extensively dolomitised”, “shallow, well-washed facies, with abundant corals and bentonic foraminifera”.

The Carboniferous Limestone is unconformably overlain by Jurassic Lower Lias Marginal Facies and the Porthkerry Formation. At the time of the inspection a 400m² ‘pocket’ of the Lower Lias deposit was visible in the western Level 0 quarry faces. QuarryDesign are of the opinion that this feature is a sinkhole which was created by post-Carboniferous dissolution of the limestone and subsequent infilling during the Triassic period.

The BGS ‘Solid and Drift’ Geology Map indicates that bedrock is at or near the surface at Longlands Quarry and for much of the surrounding area. Observations made during the site inspection reflected the BGS mapping, with overburden being observed to be less than a metre in thickness.
5.4 Geotechnical Setting

The BGS geological data indicates that an exposure located to the northeast of the site has a regional dip of 5° to the southwest. Discontinuity readings recorded during the site’s biennial Quarries Regulations Geotechnical Assessments indicate a similar low angle bedding, albeit in a different direction. Two sub-vertical joint sets have also been identified as follows:

- Bedding (B): 03°/326° (shown in red on Figure 5.2);
- Joint Set 1 (JS1): 86°/013° (shown in blue on Figure 5.2);
- Joint Set 2 (JS2): 87°/100° (shown in green on Figure 5.2);
- Random Joints (JRM), which cannot be allocated to a joint set.

The latest Geotechnical Assessment at Longlands Quarry was dated March 2017 and is next scheduled for March 2019.

Figure 5.2: Bedding, Joint Set 1 and Joint Set 2 (2010 Geotechnical Assessment)
It is considered that the scale of the proposed development will result in a limited impact at a localised level on the geological environment and the removal of circa 1.9m tonnes of limestone within the Black Rock Limestone Formation will have an insignificant impact on the formation as a whole.
6.0 WATER ENVIRONMENT

6.1 Author of the Report

A Hydrological and Hydrogeological Impact Assessment (H&HIA) has been prepared by Gavin Chaplin of BCL Hydro Consultant Hydrogeologists Ltd (‘BCL’). BCL is an independent consultancy specialising in all aspects of hydrogeology and hydrology as they relate to minerals extraction, waste disposal, water supply and related industries.

Gavin Chaplin holds a joint honours Bachelor of Science Degree (Geology & Management Science B.Sc.) conferred by Keele University, Staffordshire, United Kingdom (UK) in 1990 and a Master of Science Degree (Groundwater Engineering M.Sc.) received in 1993 from the Civil Engineering Department of Newcastle University, Newcastle upon Tyne, UK.

BCL has provided specialist services, advice and reporting to the extractive, waste and related industries since 1990. During this time a collective 100+ years of experience has been earned from involvement with wide variety of assignments.

6.2 Introduction

BCL has been appointed to undertake an assessment of the potential hydrological and hydrogeological impacts from the proposed development at the site and in the surrounding area. The assessment gives an account of the potential impacts of the proposed development upon the hydrological/hydrogeological regimes and outlines the requirements for mitigation, where necessary, needed to minimise those impacts to an acceptable level.

This section should be read in conjunction with the full H&HIA, held at Appendix 6.1 of Volume II.
6.3 **Assessment of Baseline Conditions**

The proposed extension area occupies c.7.2 hectares (ha) of agricultural lands. A field-based archaeological assessment of the proposed development has been undertaken (as detailed further at Section 12). The assessment report identified no historical activities within the lands of the proposed extension that could reasonably be anticipated to cause significant contamination of soils or groundwater.

NRW registry mapping shows inert waste to have been deposited at the site between 1985 and 1986. The inert material is recorded to have been sourced from the construction of the Sony works at Pencoed c.5.5km to the northeast of the site. The material is understood to have subsequently been processed on site for production of recycled aggregates with the residual inert material being used to assist historical restoration of selected sections of the quarry. The register shows there to be no further recorded historic landfill sites within 1.5km of the boundaries of the site.

The site lies almost entirely within the Carboniferous Friars Point Limestone (FPL) which constitutes the economic mineral of the Currently Consented Area and its proposed extension. Logging undertaken as part of a programme of 4-no. mineral exploration and piezometer boreholes drilled around the proposed extension area during 2003 proved bedrock in this area to comprise limestone of a similar character to that exposed within the faces of the existing quarry.

The FPL of the region shows evidence of karstification: epikarst is common as are caverns, swallow holes and solutionally enlarged joints and bedding planes. Earlier investigation reports observations of at least 4-no. dolines holes exposed by quarrying at the site, each described to be choked with sediments apparently derived from younger Jurassic strata which would presumably once have overlain the carboniferous deposits of the quarry.
No significant deposits of superficial materials are mapped by the BGS to be present within or immediately surrounding the site.

6.3.1 Water Features Survey

A water Features Survey was undertaken in October 2018 which identifies local hydrological features. The survey identifies a number of brooks within the surrounding areas as well as a dry valley and the Ewenny River, approximately 1.1km to the north east of the extension area. Table 5 of the H&HIA provides details on the location and description of water features found during the survey.

6.3.2 Flood Risk

Reference has also been made within the H&HIA to NRW online fluvial flood mapping and associated downloadable digital data to determine the areas that lie within modelled fluvial flood risk zones. The entirety of the site resides within Flood Risk Zone 1 (FRZ1), this being the designated zone of least fluvial flood risk being defined as having an Annual Exceedance Probability (AEP) of flooding of 1:1,000 or less frequent. The site can therefore be said to be entirely free from risk of fluvial flooding for all events up to and beyond the 1:1,000 AEP flood level.

The significantly elevated position of the site above modelled flood levels means that this continues to apply when taking into account the anticipated effects of climate change.

Reference has been made to NRW surface water flood risk mapping to identify those areas with the proposed extension that reside within modelled surface water flood risk zones. The extents of modelled surface water flood risk within and surrounding the site as shown by NRW mapping are extremely limited and are considered insignificant at the scale of interest.
6.3.3 Groundwater Level Monitoring Boreholes

A total of 10 groundwater level monitoring boreholes have been installed at the site during drilling programmes carried out during 1998 and 2003. All of the piezometers installed at the site have their response zones located within the Carboniferous Aquifer.

Recording of groundwater levels from the site piezometers has been undertaken using a 1cm graduated tape dip-meter by site personnel and earlier consultancy employees. Dipping has been undertaken over 2 main periods:

- February 1998 to May 2004 (147-readings: various frequencies); and
- October 2010 to October 2018 (40 readings: initially fortnightly, then weekly).

The collected piezometer data is included at within the H&HIA.

Both seasonal and longer term groundwater level minima and maxima vary considerably from piezometer to piezometer across the site. The data reveal no long-term groundwater level trends. Prolonged periods of groundwater recession are evident during dry summers; however, these low levels are observed to recover back to previously recorded levels during and following receipt of winter rainfall recharge.

The data has been used to prepare plots showing groundwater level distributions at the site for the minimum, average and maximum conditions. Interpolation of the data indicates a broadly southwest to northeast direction of groundwater flow towards the springs feeding the Brocastle Brook and the brook itself. The data allows only for the direction of flow within the secondary porosity system to be reliably inferred. Due to the potential for divergent flow, it does not necessarily follow that the direction of any karstic drainage that might be present within the proposed extension would accord with inferred flow direction within the secondary porosity groundwater system.
Data has been obtained from NRW, Bridgend County borough Council and Vale of Glamorgan council regarding licensed and deregulated groundwater abstractions within a 3km radius of the site. At the time of report preparation no data has been received from either of the local councils. The NRW data show one licensed groundwater abstraction within a 3km radius of the boundary of the Proposed Extension, this being operated by Tarmac Trading Limited at Ewenny Quarry c.2.8km to the west of the Proposed Extension43.

NRW have indicated that they do not operate any groundwater quality monitoring points within 3km of the site. Groundwater sampling and laboratory analysis was made from piezometers as part of earlier investigations carried out at the site. All determinand concentrations established by laboratory testing comply with UK drinking Water Standards

6.4  **Assessment of Impacts**

6.4.1  **Groundwater Levels and Flows**

The proposed development will involve extraction of limestone a Principal Aquifer from above and (seasonally) below the level of groundwater contained within the secondary porosity flow system (the diffuse flow system) of that aquifer. The presence of karstic features, including dolines and springs, within the vicinity of the site indicates the potential for conduit flow to be occurring within the strata comprising the proposed extension.

Review of historical groundwater level monitoring data collected at the site has shown that quarry operations have had no demonstrable impact upon groundwater levels within the diffuse flow system of the strata to date.

Preparatory works preceding mineral extraction within the proposed extension will involve the stripping of soils and other overburden cover to expose the limestone comprising the economic mineral. This creates the potential for
increased groundwater recharge across the stripped lands because existing rainfall runoff, evaporation and soil moisture deficit in these areas will be virtually eliminated. It is considered that these effects will be of insignificant scale because:

- The soils and overburdens to be extracted will not be exported from the site, but instead temporarily stored within peripheral bunds before use in its restoration. Thus, at restoration, the bulk attenuation effect within the site currently lent by these materials will remain largely unchanged from that which prevails today;

- The free draining nature of the limestone that resides above the watertable demonstrates that the rock to be extracted from the unsaturated zone already facilitates relatively rapid percolation of rainfall recharge;

- The very limited attenuating effect that appears to be lent currently by the unsaturated zone implies that its removal due to quarrying can only have a similarly limited effect upon recharge rates, and;

- Calculations within the H&HIA have demonstrated that there will be no material alteration in the existing depths of effective rainfall over the lands to be stripped.

As there will be no significant change to the current rates of groundwater recharge, there will be no discernible adverse impact upon groundwater levels and flows by this mechanism. As there appears to be minimal extant retardation exerted by the unsaturated zone, it follows that removal of a section of that unsaturated zone by quarrying within the proposed extension will have no significant effects upon groundwater behaviour.
During periods of low groundwater levels, the entirety of the quarry floor will reside above the level of complete saturation within the diffuse flow system of the limestone.

Groundwater ingress to the quarry is anticipated over areas of the quarry floor which reside seasonally below the level of complete saturation within the diffuse flow network of the limestone: such ingress will flow across the floor to drain back into the limestone where the floor is above the level of complete saturation.

Due to the extremely low primary and secondary permeability of the strata, it is anticipated that ingress rates to the quarry void from the diffuse flow system will be very low.

Industry standard procedures have been computed to provide estimates of the likely radius of influence upon groundwater levels within the diffuse flow system. The calculated rates of groundwater ingress from the diffuse flow system of the limestone under average conditions are modest for both the representative and worst-case values of aquifer hydraulic conductivity. It is considered that ingress of this magnitude may comfortably be drained back into the limestone across the northern parts of the quarry floor where an appreciable thickness of up to unsaturated limestones exists.

It is possible that groundwater ingress in combination with associated higher than average incident rainfall during such periods may temporarily overcome the drainage capacity of the unsaturated zone across the northern part of the quarry floor. Temporary ponding of waters for should therefore be anticipated during such periods, which, based upon review of the piezometer data, are considered likely to be measurable in days rather than weeks.

### 6.4.2 Conduit Flow

Potential exists for groundwater transit within solutionally enlarged conduits within the strata to be quarried as part of the proposed development. Whilst the
potential for existence of conduit flows is acknowledged, assessment indicates that such flows, should they exist within the rock to be extracted as part of the proposed development, are likely to be minor because:

- There is a complete absence of sinking streams within several square kilometres of the site (the presence of which could otherwise provide substantial input flows for karstic drainage though the limestone strata of the site);

- The absence of sinking streams means conduit flows would be sourced by drainage from the epikarst alone: the relatively thin mantle of epikarst observed at the quarry suggests limited stored volumes of water within the subcutaneous zone, this in-turn implying restricted development of solutionally enlarged conduits;

- Associated with the observation of thin epikarst is the fact that all dolines present within the local landscape appear to be of small-scale, being generally less then c.20m diameter at surface, and thus they are considered more likely to drain to (and have assisted development of) small rather than large conduits;

- The elevated position of the proposed development within the local landscape limits the catchment area available for supply of the volumes of concentrated recharge that would be required for the development of substantial conduit flows at the site;

- Whilst several clay filled relict conduits have been observed within the existing quarry, no evidence has been observed or reported of significant conduit inflow, and;

- The individual springs and seepages (i.e. those draining to the Brocastle Brook to the east of the site) within the group thought most likely to be
supplied by any conduit flows that might exist through the strata of the proposed development are small.

In consideration of all available evidence, it is considered that any conduit flow that may be present within the strata to be quarried as part of the proposed development is likely to be of small-scale.

There is no evidence to suggest that any conduit flow which might exist within the strata to be quarried as part of the proposed development involves transmittal of quantities of water at a scale, should such a conduit(s) be intercepted, that would be deleterious to quarry operations whether in the short or medium term.

The most significant potential primary impact of interception of conduit flows is considered to be that of the possible reduction of downstream flow within the conduit (system).

6.4.3 Groundwater Quality

The removal of soils and other overburdens prior to commencement of mineral extraction would generally confer a “High” vulnerability designation.

Any soils or other overburdens that may be stripped prior to or during mineral extraction will not be exported from the site, but instead be used in the screening and subsequent restoration of the quarry. The bulk attenuation effect within the site currently lent by such materials will remain largely unchanged at site restoration, thus no long-term effects upon groundwater quality are anticipated.

Further, as is evidenced by the lack of standing water upon quarry benches or the quarry floor, limestone within the unsaturated zone of the site facilitates relatively rapid downward percolation of rainfall recharge above the watertable.
The apparently limited extant attenuating effect lent by the unsaturated zone implies that removal of a portion of that unsaturated zone by the proposed development will have a similarly limited adverse effect upon recharge rates and thus attenuation.

6.4.4 Potential for Accidents or Spillages

Should either accidental spillage or long-term undetected leakage of sufficient volumes of potentially contaminating fluids used within quarrying operations occur this has the potential to adversely impact existing groundwater quality within the limestone aquifer.

Groundwater within the limestone aquifer is considered very likely to be in continuity with the surface water regime of the Brocastle Brook to the east of the site.

Therefore, potential exists for spillages or leakages of hydrocarbons entering groundwater to adversely impact upon the downstream surface water environment, giving rise to potential for adverse impacts upon surface water abstractions and aquatic flora and fauna.

A number of mitigation measures are proposed at Section 6.5 to mitigate against the potential impacts.

6.4.5 Potential for Suspended Solids to Enter Groundwater

Should water bearing conduits be intercepted by workings this would create potential for rapid transmission of suspended solids entrained within waters upon the floor of the quarry to enter the groundwater system. Such an occurrence has potential to affect both a reduction in the transmittal properties of the aquifer and derogate downstream groundwater quality.
Concern in this regard applies only to groundwater flow made within conduit systems; it is considered that neither the likelihood nor consequences of significant penetration of the interstitial matrix of the limestone poses any plausible threat to the water environment.

Groundwater within the limestone aquifer is considered very likely to be in continuity with the surface water regime of the Brocastle Brook to the east of the site. Therefore, in the event that significant loadings of suspended solids were mobilised into an active karstic conduit or conduits intercepted by quarry workings, a pathway would exist, via karstic flow, for suspended solids to enter the Brocastle Brook.

Whilst it is acknowledged that potential for impact exists in this regard, the evidence from several decades of quarry workings at the site, for which GCAL have made or received no reports of significant suspended solids loadings within local surface watercourses is perhaps the best evidence that the likelihood of future occurrence is very low. Notwithstanding, a number of mitigation measures are proposed at Section 6.5 to mitigate against the predicted impacts.

### 6.4.6 Flood Risk

An assessment of flood risk has been made as part of the assessment. The site lies within Development Advice Map Zone A: TAN15 (fig.1, pg.5) therefore does not require that a formal Flood Consequence Assessment (FCA) be carried out with respect to the flood risk posed to the site itself. However, in common with all proposals requiring planning permission, Section 9.0 of TAN15 states that to be acceptable, the proposed development should not increase flooding elsewhere.

The H&HIA describes how the proposed development accords with the tests detailed in TAN15. The assessment concludes that subject to the implementation of mitigation measures (as outlined in Section 6.5), that there
will be no increase of runoff from the site for all storm events up to and including a 1:100yr Annual Exceedance Probability event and thus further mitigation measures are unnecessary in this regard.

6.5 Proposed Mitigation Measures

In order to address the impacts as identified in the above section, a summary of the proposed mitigation measures is proposed below. Full details are provided in the accompanying H&HIA.

6.5.1 Groundwater Flows and Levels

Although considered unlikely, the potential for interception of conduit flow by future quarrying cannot be entirely discounted. Interpretation of the available data indicates that, should this occur, the rates of conduit derived inflow are likely to be minor and thus will not be immediately problematic for quarry operations. However, without application of restorative mitigation such interception could lead to flow reductions in spring flows, particularly those feeding the Brocastle Brook to the east of the site.

The proposed relinquishing of (conditionally) consented mineral reserves below lowest current quarry floor level of 40maOD in exchange for a lateral extension with its deepest sinking at 46maOD will prevent deepening of the entire quarry floor beneath the level of permanent saturation within the limestone aquifer. The design of the proposed development therefore represents a major mitigatory concession made in order to minimise the impact of future quarrying upon the water environment.

The most appropriate mitigation to be applied in the event that expanded quarrying intercepts conduit inflow is to ensure continuity of drainage of any flows that are intercepted into the downstream section of the intercepted conduit. A simple planning condition prohibiting pumped discharge of waters from the curtilage of the quarry would provide an enforceable impetus for this
mitigation to be applied should it be required. This is because any significant interception of conduit flows will be evident within the quarry void and it will be in the applicant’s interest to apply the proposed mitigation for such inflows, surveillance monitoring of the Brocastle Brook resurgences is considered unnecessary.

### 6.5.2 Groundwater Quality

Potential exists for contamination of groundwater from the accidental spillage or long-term leakage of hydrocarbons employed in quarry operations or the mobilisation of suspended solids entrained within runoff into the karstic drainage system of the limestone aquifer. Due to the presence of karstic drainage, potential also exists for secondary contamination of surface watercourses, particularly the Brocastle Brook and its downstream distributaries, from resurgence at springs and seepages of groundwater contaminated by quarrying operations should this occur.

Mitigation for the potential for impact associated with hydrocarbons utilised in quarrying operations involves precautionary procedures for the protection of groundwater (and thence surface water quality); by minimising the likelihood of occurrence in the first instance, and specification of reactive measures for the management of accidental spillage and/or long-term leakage of fuel, lubricating or hydraulic oils should this occur.

The mitigation measures that are to be adopted for the prevention of mobilisation of suspended solids into karstic drainage conduits, should such conduits be exposed by quarrying, are:

- Where significant dry conduits capable of draining rainfall runoff from the floor of the workings are discovered during operations, those conduits will be sealed by the use of cement grout, having first been blocked with a rock and geo-textile matrix to prevent its escape into the groundwater system, and;
• Where flowing conduits are encountered by quarry operations, for which preservation / restoration of the flow path is required in the interests of maintaining downstream groundwater flow paths the remedial works required to reconnect the intercepted flow with the downstream conduit section will be undertaken in such a manner that ensures suspended solids are not entrained into the downstream flows.

6.5.3 Surface Water

No discernible adverse primary impact is anticipated in terms of flows and levels or surface water quality. The measures proposed for the protection of conduit flows and the protection of groundwater quality from the risk of contamination by accidental spillages / long-term leakage of fuel, lubricating and hydraulic oils and suspended solids release will also provide precautionary protection for surface water quality.

6.5.4 Flood Risk

The proposed development represents neither a potential receptor nor a potential cause of flood risk. Provision of c.4,000m³ of empty sump capacity is recommended for the accommodation of storm runoff and prevention of nuisance to quarrying operations during prolonged intense rainfall.

6.6 Residual Impacts

Subject to the implementation of mitigation measures, neither primary nor secondary impacts are anticipated in terms of groundwater levels and flows or groundwater quality; therefore, there will be no residual impacts in this regard.

In terms of conduit flows, in the unlikely event that interception of significant conduit flows were to occur, application of the proposed mitigation, whereby
such flows are re-introduced to the downstream section of the bisected conduit would ensure against lasting residual impacts.

In terms of contamination, it is considered that the potential for contamination of groundwater by hydrocarbons resident within the proposed extension (and wider existing development) may be reasonably and satisfactorily mitigated by adoption of the measures outlined above; residual impacts are not anticipated.

The potential for contamination of groundwater and associated secondary impacts in this regard is considered to be extremely slight, the small risk that does exist may be reasonably and satisfactorily mitigated by adoption of the foregoing measures, residual impacts are not anticipated.

Finally, in terms of flood risk, assuming adoption of the recommended measures, neither primary nor secondary impacts are anticipated; therefore, there will be no residual impacts in this regard.

6.7 Conclusions

Conceding currently consented mineral reserves below the current quarry floor of c40maOD in exchange for a lateral extension with a deepest sinking at 46maOD will avoid extensive mineral extraction beneath the level of permanent saturation within the limestone aquifer. The design of the proposed development itself is therefore inherently conservative with respect to the potential for impact upon the water environment.

The piezometer data shows that even under maximum recorded groundwater level conditions, sufficient unsaturated limestone will remain beneath and around northern the periphery of the quarry to allow incident rainfall to be drained from the Site via percolation to strata.
Whilst seasonal interception of the saturated zone will occur around south-western periphery of the Site (as it does at present), the volumes of groundwater ingress will be small.

There is no evidence that the proposed development will intercept significant water bearing karst conduits. Epikarst is likely to be of widespread occurrence throughout the area. The removal of what is therefore a very small part of that epikarst is considered likely to have no discernible effect upon any of the numerous springs and seepages of the area.

In view of the findings of assessment and the planned approach to the proposed development, which includes specific measures for the protection of the water environment, there are considered to be no over-riding hydrogeologically or hydrologically based reasons why the planned development should not proceed in the manner described by the Application.
7.0 **NOISE**

7.1 **Author of the Report**

The Assessment of Noise has been prepared by Vibrock Ltd (‘Vibrock’). Vibrock is a leading independent environmental consultancy with significant experience in assessing the environmental impacts associated with mineral extraction. Vibrock provides monitoring services for air quality around mineral extraction site and assessments for inclusion in Environmental Impact Assessments.

Steven Edwards, the author of the assessment, works within the consultancy section and has 8 years of experience with the company. This has included the assessment of mineral extraction planning applications.

7.2 **Introduction**

Vibrock has been appointed to undertake an assessment of the potential impacts from the proposed development in terms of noise at properties surrounding the site, the local noise sensitive receptors identified, and mitigation measures proposed to minimise any noise impact.

This section should be read in conjunction with the full Noise Impact Assessment, held at Appendix 7.1 of Volume II.

7.3 **Assessment of Baseline Conditions**

Existing ambient sound levels have been measured at four locations around the proposed mineral extraction area. Measurements were made in terms of the $L_{Aeq}$ and $L_{A90}$ thus enabling the existing acoustic environment to be characterised.
The closest residential receptors to the proposed extension area have been considered in the assessment: The Golden Well Restaurant to the east of the proposed development; Highfield Farm Holiday Cottages to the south east; and Corntown Farm to the south west of the proposed extension area.

A series of noise predictions based upon BS 5228 methodologies and including assumptions regarding the working of the site have been made for the four noise sensitive locations surrounding the quarry.

7.4 **Assessment of Impacts**

Operations and activities within the proposed extension area have the potential to generate noise. The following activities are discussed within the report:

- Site Preparation and Restoration
- Mineral Extraction;
- Mineral Processing; and
- Movement of Material.

7.5 **Proposed Mitigation Measures**

Mitigation measures are discussed within the report for the potential sources of noise identified. The mitigation measures are summarised towards the rear of the report and are presented below:
<table>
<thead>
<tr>
<th>Site Operation</th>
<th>Noise Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Stripping/Site Restoration</td>
<td>Duration of activity will be restricted</td>
</tr>
<tr>
<td></td>
<td>All construction plant and equipment should comply with relevant statutory requirements</td>
</tr>
<tr>
<td></td>
<td>Ensure machinery is regularly well maintained and where appropriate fitted with exhaust silencers. Any defective equipment should not be used.</td>
</tr>
<tr>
<td></td>
<td>Minimise drop heights of materials</td>
</tr>
<tr>
<td>Mineral Extraction/Movement</td>
<td>Audible reversing warning systems on mobile plant and vehicles should be of a type which, whilst ensuring that they give proper warning, has a minimum noise impact on persons outside sites</td>
</tr>
<tr>
<td>Mineral Processing</td>
<td>Switch off or throttle-down equipment when not required</td>
</tr>
<tr>
<td></td>
<td>Keep internal haul routes clear and well maintained.</td>
</tr>
<tr>
<td></td>
<td>Avoid steep gradients where possible</td>
</tr>
</tbody>
</table>

**Table 7.1: Noise Mitigation Measures**
7.6 **Residual Impacts**

There are a number of conditions attached to the planning permission for the existing quarry which control noise generated at the site, in the interests of protecting the amenity of local residents. No alteration is proposed to the working practices which are observed in accordance with the conditions.

It is considered that with the implementation of the recommended mitigation measures, there will be no significant residual impacts upon amenity in terms of noise disturbance from the proposed development.

7.7 **Conclusions**

With the noise control recommendations implemented and the exercise of reasonable engineering control over general site operations, the proposed mineral extraction and processing at Longlands Quarry should be able to be implemented in line with current planning practice guidance for mineral sites.
8.0 **ECOLOGY**

8.1 **Author of the Report**

An Ecological Impact Assessment (EcIA) has been conducted by Dawn Thompson, of Neo Environmental Ltd. Dawn is registered with the Chartered Institute of Ecology and Environmental Management (CIEEM). All work has been carried out in line with the relevant professional guidance; CIEEM’s Guidelines for Preliminary Ecological Appraisal and the Environment, Heritage and Local Government’s Guidance on Appropriate Assessments.

Dawn Thompson is an experienced ecologist with over eight years of experience in ecological surveys and assessments. Dawn is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and the Association of Environmental & Ecological Clerks of Works (AEECoW). Dawn has experience in undertaking and managing a range of surveys and assessments including Ecological Impacts Assessments, Natura Impact Assessments / Appropriate Assessments, extended phase 1 habitat surveys, as well as ornithological, and protected species surveys, for over 300 projects. These numerous projects include a variety of development types such as energy, residential, utilities, roads and flood prevention schemes.

8.2 **Introduction**

Neo Environmental Ltd has been appointed to undertake an EcIA to assess the potential impacts of the proposed development.

The EcIA was completed at Longlands Quarry to inform the submission of a planning application to The Vale of Glamorgan Council. The aims of this report are to:

- Determine the main habitat types within and immediately adjacent to the site in relation to the Proposed Development footprint;
• Identify any actual or potential habitat or species constraints pertinent to the Proposed Development of the site and to identify how the Proposed Development can avoid, mitigate and if necessary, compensate for impacts on these actual or potential constraints;

• Assess the potential impacts of the Proposed Development during the construction, operation and decommissioning phases; and

• Identify potential opportunities for the Proposed Development to enhance and add to the biodiversity resource within the site.

This allows for the identification of potential ecological impacts and the compilation of appropriate mitigation measures where applicable. This section should be read in conjunction with the full EcIA, held at Appendix 8.1 of Volume II.

8.3 Assessment of Baseline Conditions

The proposed development at Longlands Quarry does not lie within or adjacent to any statutory or non-statutory designated environmental sites. Within 15km of the Application Site, there are four SACs and within 5km of the Application Site there are seven SSSIs. Each of these sites are outlined in Table 4-1 of the EcIA.

An extended phase 1 habitat survey was undertaken in June 2018, which identified 11 habitat types within the survey boundary; each of these are outlined below along with other relevant target notes. In addition, the phase 1 habitat map is shown within Figure 2 of the EcIA held at Appendix 8.1 of Volume II. Habitats which are likely to be lost during the quarrying activity of the Proposed Extension include improved agricultural grassland, scrub and trees. A basal rosette of what is considered likely to be devil’s bit scabious was recorded within the Application Site.
Himalayan balsam was recorded along the eastern edge of the habitat at Target Note 3. This is a Non-native Invasive Species, which is included within Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended), which makes it illegal to distribute or allow the release of Himalayan balsam into the wild.

During the initial visit on the 4th May 2018, a badger sett (with 13 entrances extending approximately 30m north to south) was observed within the scrub habitat at TN3. From the initial observations it was uncertain if the sett was currently being used by badger. Therefore, a trail camera was installed at the sett for fifteen consecutive nights (24th May 2018 - 8th June 2018) to record all activity within the sett. The camera survey did not record any badger activity. Therefore, it is considered that the sett has been abandoned. No other species of mammal was identified during the survey walkover.

It was noted that the scrub, woodland and trees offer potential habitat for a variety of wildlife including breeding birds.

8.4 Assessment of Impacts

Potential impacts from the proposed development for local ecology include habitat loss and disturbance.

Although badgers are not currently present within the application site, the field evidence suggests that they have been previously. It is considered that badger are unlikely to re-inhabit the existing sett due to the current levels of disturbance in the active quarry area. However, their presence in the future cannot be fully ruled out. From the current survey findings, it is considered that the Proposed Development will not significantly impact upon local badgers.
No evidence of otter was recorded during the ecological survey. Although this species is known to be present within the wider area, it is considered that the proposed development will not significantly impact upon this species.

The loss of trees and scrub will lead to the loss of potential foraging/commuting habitat for bats. Given the existing hedgerow/treeline network within the local area, the loss of these hedgerows/treelines will not lead to habitat fragmentation. The loss of foraging habitat is not considered to be significant for bat species. Large trees within the survey area may offer bat roost potential, however, full roost assessments were not undertaken at this time. If these trees are to be removed, then it is likely that this may affect roosting bats.

The removal of trees, hedgerow and scrub is likely to impact upon breeding birds, particularly where works are undertaken during the breeding season (March to August). The removal of these habitats is also likely to impact hedgehog and adder if present within or adjacent to the application site.

Given the presence of Himalayan Balsam within the application site there is potential for this non-native invasive species to be spread throughout the Application Site and released into other land, in the absence of mitigation.

In the absence of mitigation, the removal vegetation at TN7 is likely to result in the loss of Devil’s bit scabious.

8.4.1 Cumulative Impacts

Cumulative impacts have been assessed, including the seven current planning applications within 2km of the Application Site boundary. It has been concluded that the proposed development will not result in significant impacts for local ecology, either alone or in combination with other proposals, and will not affect the integrity or the conservation objectives of any Natura 2000 designated (or proposed) sites within the study area.
8.5 Proposed Mitigation Measures

Mitigation measures have been outlined within Table 6-1 of the EcIA. It is also recommended that any Devil's bit scabious is translocated to an appropriate area within or adjacent to the application site. Other recommendations include retaining the hedgerow/treelines around the application site boundary with appropriate supervision/inspection undertaken prior to hedgerow removal, dependant on the time of year.

8.6 Residual Impacts

There are a number of conditions attached to the planning permission for the existing quarry which control the dust and air quality impacts arising from the site. There are also a number of conditions associated with blasting at the site which seek to protect the amenity of local residents. No alteration is proposed to the working practices which are observed in accordance with the existing conditions.

It is considered that with the implementation of the recommended mitigation measures, there will be no significant residual impacts for local ecology from the Proposed Development.

8.7 Conclusions

The EcIA has been conducted by Dawn Thompson, an ecologist registered with the Chartered Institute of Ecology and Environmental Management (CIEEM). The Proposed Development at Longlands Quarry does not lie within or adjacent to any statutory or non-statutory designated environmental sites. Within 15km of the Application Site, there are four SACs and within 5km of the Application Site there are seven SSSIs.

From the current survey findings, it is considered that the proposed development will not significantly impact upon local badgers. The loss of trees
and scrub will lead to the loss of potential foraging/commuting habitat for bats however the loss of foraging habitat is not considered to be significant for bat species.

Whilst the removal of trees, hedgerow and scrub is likely to impact upon breeding birds, appropriate mitigation has been proposed which mitigates against these impacts.

It has therefore been concluded that the proposed development will not result in significant impacts for local ecology, either alone or in combination with other proposals, and will not affect the integrity or the conservation objectives of any Natura 2000 designated (or proposed) sites within the study area.
9.0 LANDSCAPE AND VISUAL

9.1 Author of the Report

A Landscape and Visual Impact Assessment (LVIA) has been undertaken for the proposed development. The LVIA comprises a desk study review of local policy and designations, a Zone of Theoretical Visibility (ZTV) model and a site visit undertaken in August 2018 to gather photography and gain an understanding of existing landscape character and visibility. Selected photomontages have also been produced.

It has been prepared by William Brown CMLI, CMIEEM, CEnv, a Chartered Landscape Architect from David Jarvis Associates (DJA) Limited. DJA is a multidisciplinary firm with extensive experience in the planning, assessment, design and implementation of minerals schemes. The firm is a Registered Practice of the Landscape Institute.

9.2 Introduction

The LVIA comprises a desk study to review the status of the site in relation to relevant national and local policy, a description of the existing ‘baseline’ landscape and visual context and an assessment of predicted landscape and visual effects arising from the proposals, including the potential for any cumulative effects in combination with other developments.

This assessment has been prepared in accordance with the Guidelines for Landscape and Visual Impact Assessment (3rd Edition), published guidance from the Countryside Agency and the former Department of the Environment, Transport and the Regions (DETR)

Guidance emphasises the responsibility of the landscape professional carrying out the assessment to ensure that the approach and methodology adopted is appropriate for the particular development to be assessed.
This section should be read in conjunction with the LVIA, held at Appendix 9.1 of Volume II.

9.3 **Assessment of Baseline Conditions**

The extension site lies on land which slopes gradually down to the north towards Brocastle Brook, a tributary of the Ewenny River. To the south of the extension site the land rises to a low ridge of higher ground along Tair Croes. Consequently, there is a much stronger visual relationship with the land to the north, which is dominated by the large warehouse structures associated with the Bridgend Industrial Estate and the Bridgend Ford factory.

The immediate landscape pattern is one of regular-shaped and medium-sized fields with a mixture of improved grassland and arable land. Fields are typically bounded by hedgerows and tree and woodland cover is sparse. It is an ordered, settled and regular landscape with a rural character heavily affected by its proximity to Bridgend, expanding industrial estates and major transport corridors.

The Study Area for the LVIA has been determined by a two-stage process: a desk study to identify any relevant landscape designations and sensitive receptors in the landscape surrounding the site and a field survey to assess the limit of potential significant visibility. The Study Area defines the area within which potential significant landscape and visual effects are predicted to be confined. Given the relative lack of sensitive landscape receptors within the local area, and the restricted zone of predicted visibility (limited visibility from the countryside to the south), the Study Area within which potentially significant effects are predicted to be confined extends to c.2km around the site.
9.3.1 Designations

As part of the assessment, a review of relevant designations adjacent to the site was undertaken. There are no statutory designated landscapes such as National Parks or Areas of Outstanding Natural Beauty within the local area. The site is also not covered by any non-statutory landscape designation. There are two Special Landscape Areas (SLA) within the study area:

- Upper and Lower Thaw Valley SLA
- Castle-upon-Alun SLA

Representative Viewpoints have been taken within both SLA’s. There are no statutory sites of nature conservation importance within or adjacent to the site boundaries. The nearest SSSI is located c.2km to the southwest.

Both Longlands Quarry and the proposed extension are privately-owned with no public access or public rights of way adjacent to their boundaries.

9.3.2 Landscape Value

The extension site is not covered by any statutory or non-statutory landscape, cultural or ecological designation. The site occupies a small section of open countryside, on the edge of an existing quarry and not considered to form part of a ‘valued’ landscape. It lies close to the urban fringe of Bridgend, and some distance from areas of acknowledged higher landscape value.

There is strong visual separation between the site and more valued and sensitive landscapes to the south and west including the Castle-upon-Alun SLA and the Glamorgan Heritage Coast.

The extension site is comprised of improved grassland fields of low value. The boundary hedgerows, semi-mature trees along the internal field boundaries and mature trees along the frontage of Corntown Road are of higher value.
The extension site forms part of the ‘Northern Lias Slopes’ aspect area (Visual and Sensory) and ‘Cowbridge West’ aspect area (Landscape Habitats), which were classified by Landmap as having a medium overall value. This extension site and surrounding area are reflective of these areas and therefore the assessment concludes that they have a medium landscape value.

### 9.3.3 Landscape Sensitivity

Judgements about landscape sensitivity are informed by a combination of a site’s landscape value and also its susceptibility to the type of change proposed. There are a number of visual ‘detractors’ in the surrounding landscape visible from the extension site including the Bridgend Industrial Estate, Ford factory, a solar development several fields to the east and distant views of large-scale wind turbines occupying the uplands to the north of Bridgend.

The proximity to the existing quarry also influences the character of the extension site, and along with the adjacent A48 road, has served to reduce the underlying level of tranquillity. The sensitivity of the landscape character of the site and surrounding aspect area is assessed as being low to medium.

The fact that the site is bounded by regularly-shaped fields and has an open sloping character increases its ability to successfully accommodate and contain the proposed extension (more than, for example, small and irregularly-shaped fields with a complex topography). However, the internal field boundaries, mature trees and hedgerows are landscape elements of slightly higher value (at a site scale) and potentially vulnerable to being removed, severed or impacted by a proposed extension. Therefore, the sensitivity of the landscape elements is regarded as being medium.
9.3.4 Visual Appraisal

The assessment of the existing or ‘baseline’ visibility of the extension site was established via a Zone of Theoretical Visibility (ZTV) which was modelled for the extension site based on existing contour levels and a field survey was undertaken to assess the actual site visibility and capture photography from a selection of representative viewpoint locations.

The results of the ZTV are illustrated on Figure 4 of the LVIA, which shows that views of the extension site are strongly curtailed to the south by topography. The ZTV predicts theoretical views from the majority of land to the north of the A48 with the exception of a few small and low-lying areas along river and stream valleys. Based on the results of the ZTV, and verification of actual site visibility during the field visit, a total of 15 viewpoints were selected which are representative of the main views surrounding the site.

9.4 Assessment of Impacts

9.4.1 Landscape Elements

The extension site comprises open countryside representative of the regularly-shaped improved grassland fields that are widespread in the surrounding landscape. Although the site makes some contribution to wider landscape character; the landscape elements themselves have a relatively low inherent value.

The localised removal of sections of hedgerow and trees represents a negative impact and the magnitude of change on the site’s landscape fabric would inevitably be high given the loss of agricultural land. The overall effect would be moderate.

Once fully established, the proposed planting along the northern and eastern boundaries would result in a net increase in the quantity and diversity of woody
vegetation compared with the existing situation and provide partial compensation for any hedgerow/tree loss associated with the mineral development.

Following completion of extraction operations, the land would be restored to its previous agricultural use. When the proposed restoration and additional planting is considered, the scheme would have a minor beneficial effect on landscape elements.

9.4.2 Landscape Character

The site lies within undesignated countryside and falls into the Landmap aspect area of ‘Northern Lias Slopes’ (Visual and Sensory) and ‘Cowbridge West’ (Landscape Habitats), both of which have been assessed as having a ‘medium’ value.

The effects on the landscape character of the site itself would inevitably be very high resulting in a major/moderate effect during the operational period. However, due to the small scale of the site and relative lack of visibility, any effects would be confined to the localised scale of the site itself and not affect the character of the wider surrounding landscape or the key characteristics of the ‘Northern Lias Slopes’.

The proposals represent a continuation of an existing and permitted quarry and the extension would not introduce a new element into the landscape but rather extend and slightly increase the pre-existing landscape effects.

Following restoration of the site to agriculture, the magnitude of change would reduce to low and the long-term effects minor.
9.4.3 Visual Effects

Limestone quarries such as the existing one at Longlands are worked over relatively long timeframes. The main visual impacts associated with the quarry during the operational period would be associated with the initial phases of soil stripping and movement. Visual impacts would reduce following the construction of perimeter bunds (minimum height of 3m) and as the original ground levels are progressively lowered by extraction. This would screen the majority of quarrying activities from view although it is anticipated that sections of the quarry face would be visible as exposed bedrock.

The Zone of Theoretical Visibility demonstrates that the land occupied by the extension site is strongly screened in views from the south by a rise and subsequent fall in topography, which prevents views from the more sensitive landscapes around the Glamorgan Heritage Coast and Castle-upon-Alun Special Landscape Area (SLA).

Views from a range of directions are assessed in the LVIA via a number of representative viewpoints. Table 3 of the LVIA demonstrates how views of the development would not be possible from a number of the viewpoints. Where views are possible, the majority of these would result in a minor or moderate effect and are assessed as not being significant.

Three viewpoints are assessed as having a Major/Moderate to Moderate effect and therefore without mitigation assessed as having a potential significant effect during the operational period of the development. No significant effects are predicted for the restoration period.

The area from which the extension would be most readily visible is the public footpath (L9/20/1) – part of the promoted Bridgend Circular Walk - running between the A48 and edge of the Ford Factory represented by Viewpoint 5 and Viewpoint 6. From here, the land rises gradually to the north with the sloping...
ground and interior of the northernmost extension field visible above Corntown Road.

There is a small area of visibility along public footpath C1/9/1 to the west of Highfield Farm (between Colwinston and the A48). As illustrated by Viewpoint 13, the interior fields of the extension are visible on the sloping ground with Bridgend in the background. Operations including soil stripping and extraction would be visible as well as perimeter bunds and planting along the eastern site boundary. It is expected that there would be a view of the exposed quarry face.

9.5 Proposed Mitigation Measures

It is proposed to create a woodland belt averaging 20m in width along the northern and eastern boundaries of the extension, which would be planted in advance of any quarry operations at the earliest opportunity.

For the initial establishment period (years 1 to 5) the effect of the planting in mitigating visual impact of operations in the extension would be relatively limited. However, the perimeter bunds would serve to screen close-range views whilst the planting was maturing. By years 10-15, the planting would have fully established and tree canopies starting to close together.

Figures 8, 10 and 12 of the LVIA are photomontages showing the effect of the proposed planting from various viewpoints at Year 10. The photomontages illustrate that by this stage, the planting would strongly filter any previously open glimpses of the extension site and provide partial filtering from the higher elevation viewpoints. The planting would reduce the level of visual effect of the development to below the threshold of significance.

There are no significant levels of additional artificial lighting proposed. There are no proposed changes to the current working hours within the consented site (largely restricted to daylight hours). Due to the proximity of Bridgend and street
lighting along the nearby A48, there is a significant existing effect on the night sky from artificial light

**9.6 Residual Impacts**

In terms of landscape elements, once fully established, the proposed planting along the northern and eastern boundaries would result in a net increase in the quantity and diversity of woody vegetation compared with the existing situation and provide partial compensation for any hedgerow/tree loss associated with the mineral development.

Following completion of extraction operations, the land would be restored to its previous agricultural use. When the proposed restoration and additional planting is considered, the scheme would have a minor beneficial effect on landscape elements, therefore no residual impacts are predicted.

In terms of landscape character, the effects on the landscape character of the site itself would inevitably be very high resulting in a major/moderate effect during the operational period. Following restoration of the site to agriculture, the magnitude of change would reduce to low and the long-term effects minor and therefore no residual impacts are predicted.

**9.7 Proposed Restoration**

A concept restoration plan has been produced by David Jarvis Associates. It is proposed that the specifics of the restoration would be discussed and agreed by the Minerals Planning Authority before finalisation.

The proposals are that the site will be progressively restored to low level agriculture. The base of the extension area would be worked to approximately 46m AOD. The stored overburden, and any available infill, would be used to restore the quarry faces and create suitable soil for agriculture above the quarry floor.
The planting belts established in advance of extraction would be retained as a vegetated edge feature around the quarry edge and could be managed for biodiversity and to ensure continued visual screening/softening.

9.8 Conclusions

The results of the LVIA demonstrate that the extension would involve a small loss of agricultural land and localised removal of small quantities of hedgerow and trees. The tree loss would be compensated for by proposed planting, which has the potential to result in an overall increase in the quantity and diversity of woody vegetation. Once extraction operations have finished the land would be restored back to agriculture.

The extension site is well-screened in views from the surrounding landscape. There would be no views from the more sensitive areas to the south-west including the Glamorgan Heritage Coast and Castleupon-Alun SLA.

Views would be confined to small sections of public footpaths to the north and west, Corntown Road and the A48. The visual effect would be reduced by perimeter bunds and proposed structural planting along the northern and eastern boundaries.

The site is not located adjacent to any statutory designation or sensitive landscape/visual receptor.

It is assessed that the proposed extension would not result in undue negative effects on the landscape or run contrary to national or local planning policy. It is therefore concluded that the proposal represents acceptable development from a landscape perspective.
10.0 **DUST AND AIR QUALITY**

10.1 **Author of the Report**

The Assessment of dust and air quality has been prepared by Vibrock, which as discussed at Section 7, is a leading independent environmental consultancy with significant experience in assessing the environmental impacts associated with mineral extraction. Vibrock provide monitoring services for air quality around mineral extraction sites and assessments for inclusion in Environmental Impact Assessments.

Steven Edwards, the author of this report, works within the consultancy section and has 8 years of experience with the company. This has included the assessment of mineral extraction planning applications.

This section should be read in conjunction with the Air Quality Assessment, held at Appendix 10.1 of Volume II.

10.2 **Introduction**

Vibrock has been appointed to undertake an assessment of the air quality impacts from the proposed development in terms of dust and PM$_{10}$ and PM$_{2.5}$ levels at properties surrounding the site. Meteorological data and air quality data local to the site has been assessed, the local dust sensitive receptors identified and mitigation measures proposed to minimise any dust impact.

10.3 **Assessment of Baseline Conditions**

The closest residential receptors to the proposed extraction area have been considered in the assessment; The Golden Mile Country Inn to the north west of the proposed development, The Golden Well Restaurant to the east of the proposed development, Highfield Farm Holiday Cottages to the south east and Corntown Farm to the south west of the proposed extension area.
Meteorological data from St Athan (South Glamorgan) has been assessed in terms of windspeed and rainfall data. The predominant wind was from the west and the total number of days with rainfall < 0.2mm was 126.4 per annum. Air quality data has been accessed from the DEFRA website. Environmental dust levels have been monitored at the closest residential properties and were found to be well below the generally accepted nuisance criterion.

10.4 Assessment of Impacts

Many of the operations and activities within and around the proposed extraction area have the potential to generate dust. The following activities are discussed within the report:

- Site Preparation and Restoration
- Mineral Extraction, Handling and On-site Transportation
- Mineral Processing
- Off-site Transportation

The Meteorological data from St Athan (South Glamorgan) has been analysed in order to establish the number of dry windy working days when dust could be blown from the site towards surrounding receptors in the absence of mitigation measures. The calculated number of dry windy working days are as follows:

- The Golden Mile Country Inn- 1.6 days per annum;
- The Golden Well Restaurant- 18.4 days per annum;
- Highfield Farm Holiday Cottages- 4.0 days per annum; and
- Corntown Farm- 4.0 days per annum.

Consideration is given in the report to the potential loading of PM$_{10}$ from the development, the distance between the dust generating source and the receptor and the mitigation measures required in order to minimise the
possibility of a dust event. With regard to PM$_{10}$ and PM$_{2.5}$ dust levels from the site, analysis has been made of the air quality data. These results show that the Air Quality Objectives will not be exceeded and therefore the air quality will not be significantly affected by this development.

### 10.5 Proposed Mitigation Measures

Mitigation measures are discussed within the report for the potential sources of dust identified. The mitigation measures are summarised towards the rear of the report and are presented below:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Dust Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil stripping and restoration:</td>
<td>• Minimise the duration of activity</td>
</tr>
<tr>
<td></td>
<td>• Avoid soil handling during adverse weather</td>
</tr>
<tr>
<td></td>
<td>• Soil bunds graded to minimise wind-blown dust and seeded</td>
</tr>
<tr>
<td></td>
<td>• Progressive restoration to minimise the exposed mineral area</td>
</tr>
<tr>
<td></td>
<td>• Restrict access to restored areas</td>
</tr>
<tr>
<td></td>
<td>• Temporary cessation of activities in the event of unacceptable dust emissions in the vicinity of receptor properties</td>
</tr>
<tr>
<td>Mineral Extraction/Processing:</td>
<td>• Minimise drop heights for loading and tipping</td>
</tr>
<tr>
<td></td>
<td>• Siting of storage mounds to take advantage of shelter from wind</td>
</tr>
<tr>
<td></td>
<td>• Retain boundary vegetation where possible</td>
</tr>
<tr>
<td></td>
<td>• Drop heights to be minimised at all times</td>
</tr>
<tr>
<td></td>
<td>• All vehicles checked for overloading to reduce spillages</td>
</tr>
</tbody>
</table>
It is considered that with the implementation of the recommended dust mitigation measures identified within the assessment and the implementation of the procedures within the dust management section of the assessment, this will minimise the possibility of a dust event occurring. There will be no significant residual impacts for dust or air quality from the proposed development.
10.7 Conclusions

The air quality and dust assessment concludes that it is unlikely that any significant decrease in local air quality will occur due to the proposed operations at Longlands Quarry. Any dust occurrence event will be limited and of short duration and will be minimised by implementation of the dust control recommendations. The operation of the site will have a negligible impact on adjacent residential properties.

With regard to PM$_{10}$ dust levels from the site, analysis has been made of the air quality data. This has been combined with the extra burden of 1 µg/m$^3$ for the quarry. These results show that the Air Quality Objectives will not be exceeded and therefore the air quality will not be significantly affected by this development.

The continued operation of the site will have a negligible impact on adjacent residential properties. The likelihood of a short term dust event occurring is very low.
11.0 VEHICLE MOVEMENTS & HIGHWAYS

11.1 Access

The proposed development seeks no alteration to the existing practices at the site. The development will not result in any intensification over and above that already assessed and permitted at the site. Therefore, a traffic impact assessment is not considered necessary.

The proposed development will utilise the access arrangements approved, following consultation with the highways authority under Planning Application Refs 1997/01242/FUL (ROMP) and 1998/00019/FUL (inert recycling centre). In the case of the latter, the cumulative impact of both quarry and recycling operations were considered with impacts judged to be acceptable, with permission being granted by the Planning Inspectorate.

The existing, approved access for the site will continue to be utilised. Access to the site is via B4524 Corntown Road. The existing access arrangements at the site ensure that all vehicles accessing the site must come from the south east, along Corntown Road, turning left into the site. When leaving the site, vehicles must turn right.

This arrangement allows HGV’s to achieve suitable visibility when entering and leaving the site. The management system also encourages traffic away from the village of Corntown and allows HGV’s to access the primary road network (A48) within less than 1 km of the site.

This routing arrangement avoids the need for HGV’s associated with the site travelling through the village of Corntown, reducing any potential nuisance for residents associated with traffic movements or potential amenity impacts (noise/dust) which may be generated by HGV’s. No alteration is proposed to this routing arrangement.
11.2 Traffic Movements

The traffic generated by the proposed development is not proposed to increase over and above that already assessed and approved for the site.

Condition 4 of the existing planning permission for the site (Ref 2017/00103/FUL) limits the quantity of mineral which may be despatched from the site, stating that the total annual quantity of stone despatched from the site shall not exceed 214,000 tonnes in any calendar year.

Condition 9 of the permission states that without the prior written approval of the Mineral Planning Authority, no more than 100 loaded vehicles shall leave the site during any full working day and no more than 50 loaded vehicles shall leave the site on a Saturday. The proposed development does not seek to alter the number of HGV’s which may enter or leave the site from that previously assessed, approved and conditioned via Condition 9.

A number of other highways conditions are attached to the existing planning permission for the site which ensure highway safety and amenity. No alterations are proposed to these conditions. Both planning permissions are time limited to the year 2042. No amendment to this end date is sought within this application.

The proposed development seeks permission for the extraction of ca. 1.97m tonnes of limestone. Based upon a payload of 20 tonnes, a working period of 20 years\(^3\) (allowing for lead in-time etc) the proposed development would generate on average of 18 loads (36 movements per day), even coupled with those movements generated by the recycling operation, the proposed development would result in levels of traffic significantly lower than the 100 load limit currently observed at the site for weekdays and the 50 loads per day limit for Saturdays.

\(^3\) Based upon 275 working days per annum
The development proposals seek to limit operations to those within the previously assessed and approved limits and restrictions established for the site. The proposed development will therefore have a negligible impact upon highway safety.

11.3 **Highways Conclusions**

The access arrangements for the site were previously approved subject to no more than 100 loaded vehicles leaving the site during any full working day. The proposed development would result in an average of 36 movements per day. Even when coupled with movements associated with the recycling operation, the traffic associated with the proposed development would be significantly less than the previously assessed and approved limits of less than 100 vehicles leaving site during a weekday and 50 on a Saturday.

The existing access at the site was approved to accommodate these levels of traffic which is significantly higher than those proposed. The access is therefore considered suitable in safety terms.
12.0 **CULTURAL HERITAGE**

12.1 **Author of the Report**

The Cultural Heritage Assessment was prepared by Andrew Josephs Associates, a consultancy with extensive experience within all development sectors, and in particular mineral schemes.

Andrew Josephs, Managing Director of Andrew Josephs Associates has authored over 800 Heritage Statements. He was previously Principal Consultant (Director of Heritage and Archaeology) at AMEC and Wardell Armstrong, where he started in 1992, becoming of the UK’s first consultants in the post-PPG16 era of developer-funded archaeology. Prior to 1992, he worked as a field-based archaeologist and researcher for universities and units in the UK, Europe and the USA.

12.2 **Introduction**

The report considers all aspects of cultural heritage, and the potential effects of the proposed scheme upon them, including both direct and indirect effects. Direct effects are those that physically affect or damage an archaeological site, historic structure or landscape. Indirect effects can occur as a result of significant changes to the setting of an historic asset or landscape, whether permanent or temporary. This is particularly relevant to designated features such as Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Parks and Gardens and Historic Battlefields.

After analysis of topography and the screening effects of vegetation, a study area of 1km from the boundary of the Proposed Extension Area (PEA) was considered an appropriate distance to assess potential effects upon the setting of designated heritage assets.
This section should be read in conjunction with the full Cultural Heritage Assessment, held at Appendix 12.1 of Volume II.

12.3 **Assessment of Baseline Conditions**

12.3.1 **Designated Assets**

The PEA is situated in a rural landscape with strong topographical influences. One scheduled monument lies within 1km of the PEA: Corntown causewayed enclosure, situated 500m south west of the PEA.

The monument comprises the remains of a causewayed enclosure, dating to the Neolithic period (c4,400-2,300BC). The enclosure is visible as a crop mark in a field under arable cultivation and comprises multiple rings of interrupted ditches. A large assemblage of Neolithic worked flint has been recovered from the area of the site.

The nearest listed buildings to the proposed extension are the courtyard range at Brocastle and the House that lie about 500m east of the PEA. The view between these properties and the PEA is obstructed by mature trees completely screening views in that direction.

A further three listed buildings are present within the village of Corntown, fronting onto the main street. None of them has any sight of the PEA which is concealed by both topography and also buildings and vegetation.

Within Corntown, just over 1.4 km from the existing quarry and 1.7 km from the PEA, is the historic park and garden of Ewenny Priory. The nearest conservation area is Colwinston Tregolwyn, about 2km southeast of the PEA. There is no intervisibility between either and the PEA due to topography.
12.3.2 Archaeology

Desk-based assessment including historical research was undertaken.

Details of investigations, sites and finds lying within 1km of the centre of the PEA were provided by the Glamorgan Gwent Historic Environment Record. Eleven sites lie within 1km, the majority post-medieval in date. Apart from the records associated with the causewayed enclosure there do not appear to be any other prehistoric remains within the study area.

The modern A48 and the B4524 where they pass the existing quarry are identified as being on the line of a Roman road between Cardiff and Neath, but no Roman remains are recorded in the vicinity of this line within the study area.

The majority of HER entries relate to buildings such as farms or industrial activities, including quarrying. An area of ridge and furrow may be a relic of the medieval agricultural landscape.
Historic maps show a very static landscape of rectangular fields in the nineteenth century that continued almost unchanged through the twentieth century. The 1900 map shows *Old Quarries* and *Lime Kiln* within the PEA.

A site walkover was carried out in July 2018. No earthworks were noted on the surface of the fields and the PEA has been regularly ploughed. The site of the Limekiln is an area of rough grass extending out into the field from the field boundary and close examination showed a large number of limestones between 0.15-0.3m across. None of the stones were in situ, nor obviously mortared or burnt. The site visit located no previously unrecorded archaeological features.

### 12.4 Assessment of Impacts

In accordance with the Regulations the significance of an effect has been assessed. This is achieved using a combination of published guidance and professional judgement. Four criteria have been considered in evaluating the significance of the predicted effects of the proposed development: type of effect; probability of effect occurring; sensitivity and magnitude.

### 12.4.1 Direct Effects

The nature of mineral extraction results in the total loss of the archaeological resource wherever extraction takes place, and the potential loss or damage in other areas associated with infrastructure and landscaping.

The PEA lies within an area sparse in significant archaeology, with the Glamorgan Gwent Historic Environment Record (HER) including mainly sites of post-medieval date for a search area of 1km.

Land-use, and in particular past ploughing, would indicate that any archaeology present will have been truncated and no earthworks are present.
Planning guidance recognises that, should archaeology of less than national importance be identified, an acceptable alternative is preservation by record through archaeological excavation, recording, analysis and publication appropriate to significance of the archaeological resource. This would be achieved by the undertaking of an archaeological watching brief during development.

Consultation with the Archaeological Planning Officer, Glamorgan-Gwent Archaeological Trust, as adviser to Vale of Glamorgan Council, confirms that this approach is acceptable should consent be granted.

Recording of the limekiln, supported by documentary research, would also be undertaken.

The mitigation strategy would be formalised within a Written Scheme of Investigation submitted to Vale of Glamorgan Council for approval before development commenced.

The effects upon archaeology are assessed as of medium magnitude and no significance.

12.4.2 Indirect Effects

One scheduled monument and five listed buildings lie within 1km of the PEA, but none nearer than 500m. There would be no visual connection with the PEA due to topography, intervening buildings, vegetation and distance. There are no combined or cumulative effects of the proposed development.

The effect of the proposed development upon designated assets is therefore neutral (i.e. no change to the existing situation) and no mitigation is required.
12.5 **Proposed Mitigation Measures**

As described above, mitigation would be achieved by the undertaking of an archaeological watching brief during development. Consultation with the Archaeological Planning Officer, Glamorgan-Gwent Archaeological Trust, as adviser to Vale of Glamorgan Council, confirms that this approach is acceptable should consent be granted.

Recording of the limekiln, supported by documentary research, would also be undertaken. The mitigation strategy would be formalised within a Written Scheme of Investigation submitted to Vale of Glamorgan Council for approval before development commenced.

12.6 **Residual Impacts**

It is considered that with the implementation of the recommended mitigation which would be achieved by the undertaking of an archaeological watching brief during development, there will be no significant residual impacts in terms of cultural heritage from the proposed development.

12.7 **Conclusions**

Having regard to the baseline conditions and the nature of the proposed development, there would be no residual effects upon known cultural heritage assets. The proposed development therefore fully accords with both local and national cultural heritage policy, and in particular, the Regulations and PPW.
13.0  NATURAL RESOURCES

13.1  Aggregate Material

It is a requirement that consideration be given to the likely significant direct and indirect consequences that a development proposal would have on the environment which might result from the use of natural resources.

Limestone aggregates are won from naturally occurring, finite resources and are the main raw materials for cement, block, brick, precast and various other building materials which require the structural properties and strength inherent in aggregate materials. As outlined in Section 5 it is considered that the proposed project will not give rise to a significant impact upon the existing limestone formation.

The excavated material will be utilised for a range of purposes. Global environmental issues like fossil fuel use and alternative energy sources are matters subject to national/international treaties and agreements and are considered to be outside the scope of this statement, as the cumulative contributions of this particular development to such matters are insignificant in a national context.

The Applicant intends on conserving natural resources by maximising the resource potential by way of extracting material for a variety of uses from an existing, established site, from a non-renewable resource and ensuring that non-renewable resources are used prudently and efficiently.

13.2  Soils

As detailed in Section 3, the application site consists of an existing quarry and circa 6 ha of agricultural land, used for grazing. In the absence of approved methods for assessing significance criteria in respect of the loss of Agricultural
Land and impact on Farm Businesses, the criteria set out in the following tables are commonly used.

<table>
<thead>
<tr>
<th>Significance</th>
<th>Evaluation criteria</th>
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<tbody>
<tr>
<td>Major Adverse</td>
<td>20 hectares or more of best and most versatile land (i.e. grades 1, 2 and 3a)</td>
</tr>
<tr>
<td>Moderate Adverse</td>
<td>Between 10-19 hectares of best and most versatile land (i.e. grades 1, 2 and 3a) and/or 50 ha or more of lower quality land (i.e. 3b, 4 and 5).</td>
</tr>
<tr>
<td>Minor Adverse</td>
<td>Between 4-9 hectares of best and most versatile land (i.e. grades 1, 2 and 3a) and/or 10-49 hectares or more of lower quality land (i.e. grades 3b, 4 and 5)</td>
</tr>
<tr>
<td>Negligible</td>
<td>Less than 4 hectares of best and most versatile land (i.e. grades 1, 2 and 3a) and/or less than 10 ha of lower quality land (i.e. 3b, 4 and 5).</td>
</tr>
</tbody>
</table>

*Table 13.1: Criteria for assessing the significance of Loss of Agricultural Land*

Therefore, at worst, the loss of land would result in only a minor adverse impact. Presently, extraction at the existing site is permitted to a maximum depth of 25mAOD, resulting in the restoration including a water body. The restoration proposals for the site will see a holistic restoration of the entire site to beneficial agricultural use. Given the above, the temporary loss of agricultural land at the application site is not considered to be significant.

13.3 **Residual Impacts/ Mitigation Measures**

It is considered that the loss of soil cover to facilitate the continued expansion of the quarry will be mitigated by the screening benefits and the progressive site restoration. The soil transfer will have no effect on neighbouring agricultural lands or ecological features. The proposed restoration proposals will see the site restored to agricultural use.
13.4 Conclusion

The Applicant intends to conserve the natural resources by maximising the resource potential by making best use of an existing, established quarry with its established infrastructure and working practices. At worst the loss of agricultural land is considered to result in a minor adverse effect. The existing soils have limited potential for any form of agriculture. The elevation of the site coupled with the shallow soil depths will limit the potential for efficient economic use.

It is considered that the loss of soil cover to facilitate the continued expansion of the quarry will be mitigated by the screening benefits and the progressive site restoration. The soil transfer will have no effect on neighbouring agricultural lands or ecological features.
14.0 **SOCIO-ECONOMIC IMPACTS**

14.1 **Introduction**

This section considers the impact of the proposed development in the context of population/settlement, employment and other socio-economic effects.

The proposed development will continue the applicant’s mineral operation in the area, which is considered to be of economic benefit both locally and on a regional scale. The scheme will ensure a consistent supply of high-quality mineral which is in demand, without a break in production at Longlands Quarry. It will support the growth of the local and regional construction industry, which is experiencing recovery following the recession in construction activity since 2007.

The proposed development will provide sustained employment for 18 members of staff currently based at the site, who rely directly on the working of reserves at the Longlands Quarry site. In addition to the direct workforce, there will also be continued employment for 10 road hauliers.

The quarry has an expenditure of over £1 million per annum with a proportion of this expenditure being made locally on the likes of purchases, transport, fuel, wages and business rates.

The proposed development offers long term, stable, full-time employment prospects at a local level and provides opportunities for promotion and advancement though training and experience. The applicant has also invested in local communities in terms of training, educating, employment contributions, economic advancement, sponsorship and charitable support.

The proposals will also generate and maintain employment for many skilled local contractors (e.g. electricians and contractors involved in machinery repair and maintenance, plant hire, earth moving, and landscaping work, etc.).
PPW (paragraph 5.14.1) highlights the importance of mineral to society, stating that:

“Society needs, and will continue to need for the foreseeable future, a wide range of minerals. Minerals are the principal constituents of most construction products, many pharmaceutical, chemical, agricultural, automotive, metallurgical, electronics, aerospace, plastics, ceramic and paper products. Construction related minerals and mineral products are particularly important in Wales and are essential for housing and infrastructure, such as schools, roads, railways, airports and flood defences and a steady and adequate supply of materials is necessary”.

Paragraph 4.2.2 of PPW describes how the planning system must:

- identify a supply of land to support the delivery of the housing requirement to meet the differing needs of communities across all tenures;
- enable provision of a range of well-designed, energy efficient, good quality market and affordable housing that will contribute to the creation of sustainable places; and
- focus on the delivery of the identified housing requirement and the related land supply.

The Welsh Government’s approach, set out in the National Housing Strategy is to:

- provide more housing of the right type and offer more choice;
- improve homes and communities, including the energy efficiency of new and existing homes; and
- improve housing-related services and support, particularly for vulnerable people and people from minority groups.

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4 Improving Lives and Communities – Homes in Wales, Welsh Assembly Government, 2010
The Mineral Products Association\(^5\) describes how in a typical year, around 205 million tonnes of aggregates are required in the UK, some four tonnes per person. Around 90 per cent of all aggregates are used by the construction industry, with the construction of a typical new house using up to 50 tonnes of aggregates.

The proposed development is therefore considered to result in a positive socio-economic impact, both directly on a local level and indirectly on a wider, regional level. The proposed development will sustain employment at the site, support indirect employment through sub-contracting services required to support operations at the quarry. The proposed development will also ensure the supply of construction related minerals and mineral products which are particularly important in Wales.

\(^{5}\) Mineral Products Association- [https://mineralproducts.org/prod_agg01.htm](https://mineralproducts.org/prod_agg01.htm)
15.0 INTER-RELATIONSHIP WITH THE FOREGOING

The ES has considered the environmental aspects within and around the site, which potentially could experience impact as a result of the proposed development. The proposed development includes the removal of overburden and placement, limestone extraction and restoration to agricultural use. The proposed development

As part of the proposals, the applicant would be prepared to relinquish permitted reserves at depths below the existing floor in favour of a lateral eastern extension.

The scope of the assessment and a review of alternative sites have been determined following discussions with the applicant. The reasons for concluding as to why the continued development of Longlands Quarry as the Best Practical Environmental Option available to Applicant, have also been outlined.

The application site lies outwith any designated areas and the extension area is not identified for any particular use of purpose on the adopted LDP Proposals Map. The existing Quarry is identified on the Proposals Map and records show that there has been a quarry on the site since at least the 1950’s.

The Assessment considers the potential significant environmental impacts that could arise as a consequence of the development and a number of specialist reports have been commissioned and completed throughout the last 12 months. Where necessary, mitigation measures have been included within the development proposals. The design has evolved to the one now submitted, with the level of impacts reduced to an acceptable level or eradicated altogether.

All interactions have been discussed in the relevant Sections and in greater detail within the individual Specialist Reports held as Appendices. It is
considered that to repeat these relationships in this Section would be unnecessary.

However, for ease of reference and to indicate the natural overlap between Sections and the topics that have been considered in each Section, Table 15.1 below illustrates the areas of commonality within each Section with respect to the eight specific topic areas, as provided for by the Regulations.
Table 15.1

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<th>Sect No.</th>
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<th>Land and Soils</th>
<th>Water</th>
<th>Air and Climate</th>
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Table 15.1 Commonality within each Section with respect to specific topic area.
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