1 INTRODUCTION

1.1 About this Document

1.1.1 This document forms the Environmental Statement (ES) for the proposed extension to the quarry to the east to be known as area 8. The extension is in to the agricultural field to the east of the current working area known as area 7 that was granted planning permission in September 2018. Refer to plan number 1 for the extent of the planning application area with reference WEQ/AR08/PA-01, application area and plan 3 with reference WEQ/AR08/PA-03 that shows all the planning permissions for the site and the application area for mineral extraction in area 8 in relation to the other areas granted planning permission to place the extension to working the quarry in context. Refer to appendix 2 for the plans for the development.

1.1.2 The ES reports on the findings of an assessment of the environmental effects of the proposed scheme in accordance with the Environmental Assessment Regulations 2017 to identify probable impacts relating to the biodiversity, landscape and visual impact, traffic movements on the B6474, archaeology, stability of the land, noise, air quality agricultural land quality and vibration.

1.1.3 The ES also assesses the potential for cumulative effects with regard to the proposed development of the site with the surface mining operations at the quarry at the present time, which in itself is not subject to the requirement for an individual EIA. The site has been considered for the extension to the quarry from Area 7 the previous planning permissions and the recent (ROMP) Review of the Old Mining Permission IDO 237 for the cumulative impact on the area with an extension to the east of the existing quarry and the base line conditions.

1.1.4 This ES accompanies a planning application submitted to North Yorkshire County Council by Cromwell Wood Estate Company Limited on behalf Went Valley Aggregates and Recycling Limited. This environmental statement has been prepared to assess the same impact as discussed in the opinion provided by North Yorkshire County Council following the submission of a request for a screening opinion dated 4th January 2016 under the Environmental Assessment Regulations 2011, Part 2 (5) for areas 5, 6 and 7. Refer to appendix 1. The applicant considers that the screening opinion and scoping opinion are applicable to this application and it has been used as guidance for the preparation of this ES. The County Council will screen the application under the 2017 regulations based on the request for a scoping opinion included in appendix 1 provided with the application and provide a letter confirming the application is EIA development or not and if so the provision of more information required over and above the

information provided. The information provided for the area 8 application is based on the previous statements provided for Area 4, 5, 6 and 7.

1.1.5 The applicant has considered the information that was required for the ES that accompanied the planning applications for Area 4 and Areas 5, 6 and 7. Most of the information supplied for this application for area 8 has been updated from the reports prepared for the previous applications and that in itself is recent, prepared within the last three years and considers the assessment of the impact for the future workings at the quarry agreed with the MPA. The responses from the consultees for area 4, 5, 6 and 7 have been reviewed by the applicant's agent from the 6th March 2016 and December 2016 and the formal scoping opinion for areas 5, 6 & 7 issued by NYCC on the 21st March 2016 which is included in appendix 1. These letters have informed the applicant of what is required in the Environmental Impact Assessment.

1.1.6 Since the receipt of the NYCC Scoping Opinion for the areas 5, 6 and 7 an application was prepared for those areas and planning permission granted in September 2018 with reference NY2016/0185/ENV. The scoping opinion and the environmental statement for that application have been reviewed for the preparation of this supporting statement for the planning application to work limestone within area 8. The subjects covered are ecology, the landscape and visual impact assessment, the restoration of the site and concept for enhancing biodiversity, the geotechnical stability assessment, the traffic trips, the agricultural land classification and the archaeology of the area have been assessed associated with the quarry site and reviewed from the earlier information and onsite inspections based on the responses from the Council and Natural England for the previous applications.

1.1.7 The proposal has been assessed by the applicant's agent and it is EIA development according to Schedule 2 of the 2017 Regulations and consequently a request for a scoping opinion is included with this application in case there are any other impacts to be assessed other than the ones discussed in the ES and assessed in the previous applications.

1.2 Extension to Went Edge Quarry in Area 8.

1.2.1 The site is approximately 9.7 hectares (24 acres) and is one large arable field located to the east of the industrial estate and operational quarry, north of Went Edge Road and south of Brockadale Plantation and the River Went. The extension area will use the same new access road to the site through the existing quarry and the wheel cleaning facilities on site. The field to the east of the existing quarry is 150 metres wide and 650 metres long. The area 8 land has

been known as belonging to the local farmer and has been purchased by the company and the land is now in the control of the applicant.

1.2.2 A site application plan is provided in plan number 2 with reference number WEQ/AR8/PA-02, the topographic survey of the site at the time this application, was being prepared with reference number plan 4, drawing number WEQ/AR8/PA-04 in appendix 2 and a more detailed site boundary plan is provided with the existing planning permissions for the site on plan number 3 with drawing number WEQ/AR8/PA-03. The details of the restoration are provided on plan number 10 with reference WEQ/AR08/PA-10. It is proposed to work the stone east towards the electricity pylon on the boundary of the field with a standoff from the plantation of 10 metres wide and also within 30 metres of the boundary of the site with Went Edge Road down to a level of 20 metres aod. Once the phase 7 is worked on the east side to extract limestone to the proposed 30 metres wide standoff from the road, the faces will be filled against using imported inert waste as engineered fill and limestone fines from the quarry to cover the inert fill and restore the site as the working progresses eastward.

1.22 The western boundary of the application site is defined by the quarry and Area 7 and working is currently taking place in area 6 near to Swales Plantation. Within the site is the industrial estate known as Smeaton Lime works or now Smeaton Industrial Estate that has been relocated into the base of the quarry over the past 2 years. To the north is the Brockadale Plantation which is a wooded area in the River Went valley which has a SSSI designation. The land to the south, west and east of the application area has the typical land use of arable agricultural, with some interspersed built form of mainly farm buildings. To the south of the site is a wide open area of farmland, to the west is the village of Wentbridge, to the east is Kirk Smeaton and located to the west between Wentbridge and the site is the A1(M). The NG Coordinates are 417000 mE and 450400 mN and the postcode is WF8 3LU.

1.2.3 The proposal to continue quarrying limestone in area 8 is a natural extension to the existing quarry and Area 7 and will remove 9.7 hectares of farmland with 8.6 hectares worked to provide limestone. The remaining area will be used for screening the working and soil storage. The application site is currently used for arable farm land and is surrounded by mature trees and hedges on the north side and eastern boundary. The field has been divided into 3 phases so the future phases 8 B and 8C can be farmed until required refer to plan number 2 with reference number WEQ/AR08-PA-02.. The land is falling gently to the east of the quarry to the pylon and hedge.

1.2.4 At the western end of the quarry and industrial estate a two lane entrance road exists leading to the office and weighbridge within the curtilage of the estate. There are three businesses in the estate as well as the quarry that provide mortar and concrete, plant hire and sawn stone. There is also a storage yard for an offsite business that has been relocated into the base of the quarry. The businesses have been relocated that are associated with the quarry into the base so that they can continue to use stone from the site. The platform plant hire business found new premises and new tenants have been secured for the new industrial units in the base of the quarry that is within the same footprint of the industrial estate albeit 30 metres below the surface has been prepared.

1.2.5 The businesses were relocated into the base of the quarry as they are ancillary to the mineral operation in that they use quarry product and sand in the mortar and concrete batch plants. The building stone business uses blocks from the quarry to cut lintels and crop house walling. The yards have been placed into the base of the quarry within the footprint of the industrial estate as it is delineated on the surface and has planning permission for under the 1947 IDO. The layout of the yards is shown on plan number 4 (WEQ/AR08/PA-04) in appendix 2.

1.2.6 The area 8 site will be excavated using hydraulic excavators and dumpers to remove the soil and place this on a designated area in the south side of the site within the 30 metres wide standoff from Went Edge Road. The thin cover of subsoil and clay will be removed down to the underlying cream limestone rock head and taken to the storage area to be stored for future use. The soil stores are shown on plan numbers 5, 6 and 7 as the soil is stored and shaped up for a screen bund for the quarry. The soil will be stored, on the southern side of the extension area 8 to screen the working alongside the access road and adjacent to Went Edge Road. The screening bund on the eastern side of Area 7 where the existing soil store is will be relocated to the boundary of each phase of area 8 and shaped up for edge protection to deter trespass. The soil bund will be extended to the east from the south east corner of Area 7 after the planting and aftercare scheme that was agreed with the County Landscape Officer and the MPA at the meeting in December 2014 to discuss the long term plan for the quarry.

1.2.7 There will be temporary soil storage areas off area 8 A in areas 8B and 8C as required to screen the quarrying operation as limestone is worked from the surface down to 3 metres onto the hard limestone rock head. The weathered limestone will be passed into the base of the quarry to be processed. The sub soil will be removed to the base of the quarry and topsoil placed in the bunds on the boundary.

1.2.6 The site is underlain with 35 metres of Magnesium Limestone lying on a bed of marl deposited in the Permian period. The strata lies un-conformably, which means a geological epoch is missing over the Carboniferous Coal Measures which contain coal seams which have been worked in the past by underground mining at a depth of 300 to 700 metres. There is no evidence of subsidence in the quarry but there has been some minor subsidence damage to properties in the village and on the highway connections to the A1 in the past. It is likely that the area will no longer be affected by coal mining subsidence as all the deep mines have now closed in the UK with Kellingley closing in December 2015. No working has taken place under the site or in the close vicinity since 2002.

1.2.8 The existing access to the quarry has been upgraded on receipt of the planning permission for area the 5,6 &7 extensions and a new access granted planning permission on 16th November 2018 with reference NY/2017/0310/FUL (C8/2017/0374/CPO and this access will continue to be used for the quarry and the industrial estate. Since the grant of planning permission for area 4 in July 2015, the quarry access road into the base of the quarry has been covered with tarmac from the weighbridge to the quarry floor as the first stage of relocating the industrial estate and managing mud on the road. The drainage of the road is to the side of the quarry in a channel which then flows to a sump in the base of the quarry where water settles and is impounded for use on site for dust suppression and process water.

1.2.9 The output from the quarry will remain the same as it is now at 12,000 tonnes per week and there is no proposal for an increase in output because of the extension, it is to maintain production at the current levels subject to the growth in the economy. The current output has been up to 4,000 tonnes per day on occasion but normally is 2,500 tonnes per day which is 138 truck movements in and 138 out of the site.

1.3 Cumulative Effects - Mixed Use Development

1.3.1 The site is currently used as a limestone quarry with associated development on the site using limestone for mortar, concrete and building stone. There is a saw shed equipped with a circular saw and other dressing equipment to produce limestone building materials such as house walling, architectural stone and cladding. The saw shed is part of the building stone centre for the quarry to saw into blocks into monumental stone, cills, lintels and jambs. A mortar plant and a concrete batch plant that uses the washed limestone grit sand have been relocated to the base of the quarry in two new yards. The site is an active quarry that produces a wide range of aggregates and also limestone sand from the limestone dust for the concrete block market. The aggregate products are of a

high quality and of various dimensions to meet the specifications of drainage, highway construction and the civil engineering sector.

1.3.2 In addition the quarry site also has planning permission for a waste transfer station to process inert construction, demolition and excavation waste, glass, ceramic, soil and topsoil for sale. This is located in the base of the quarry and the area is sealed with concrete floors and bays to minimise surface water runoff from the waste pile. There is also the end of life vehicle (ELV) compound which is currently being used for storage of plant and containers. The businesses ancillary to the quarry operation have been moved into the quarry and the stone within 1947 planning permission area with reference number NY/2010/0317/MRP has been worked out and material tipped against the faces to support the strata. Please refer to plan number 4 that shows the current quarry and industrial site.

1.3.3 The industrial site when located at the surface was used for the storage of shipping containers and the sales of truck parts from dismantled trucks and trailers planning permission is still extant for the use of the industrial estate for storage of containers. The site was a lime works and an industrial use was established before the introduction of the Town and Country Planning Act 1947. The site has permission for B1, B2 and B8 use and the hours of operation are 24 hours per day 365 days a year. The size of the designated industrial area is shown on plan number 2, WEQ/AR08/PA-02. The relocation of the estate will be regularised with NYCC as it involves waste management and the restoration of the quarry. Selby Council will be contacted for advice on the planning matters relating to the retrospective relocation the industrial estate.

1.3.4 The production of an EIA is not a requirement for the mixed use development as described further in the following section nonetheless it was considered that any potential environmental effects which would occur should be assessed within this ES as they would represent cumulative effects which would arise as a result of the proposed site remediation.

1.4 The Environmental Impact Assessment Process

EIA

1.4.1 Environmental Impact Assessment (EIA) is a process which is designed to ensure that a Planning Authority has the relevant information to enable it to determine a planning application in the full knowledge of the likely significant impact on the environment of the project. The developer is required to submit information required to assess the environmental effects of the development in the form of an Environmental Statement (ES). This forms the basis for consultation with statutory consultees and other bodies and members of the public and enables decision-makers to consider these effects when determining

the related planning application. The EIA process has a number of characteristics:

- It is a systematic process and includes a sequence of tasks defined by regulation and practice;
- It is an analytical process and entails the development of specialist skills from the disciplines of environmental science;
- It is an impartial process whose purpose is to inform the decision-maker and not to promote the project;
- It is a consultative process with information being obtained from and fed back to interested parties including statutory and non-statutory agencies; and
- It is an interactive process, which enables environmental issues to be addressed during the planning and design of a project.

Regulatory Context

1.4.2 The requirement of the European Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, as amended by the Council Directive 97/11/EC, are transposed with regard to the proposal in question by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. These are referred to as the 'EIA Regulations' hereafter. The EIA Regulations require that any development which is listed in Schedule 2 be subject to EIA (Regulation 2(1)).

1.4.3 The proposed extension to Went Edge quarry site falls within the definition of Section 2(a) of Schedule 2, 'Quarries, open-cast mining and peat extraction' as all development described in Section 2(a) requires to e screened for an EIA unless it is for 'the construction of buildings or other ancillary structures where the new floorspace does not exceed 1,000 square metres', as defined in Section 2(a) column 2.

1.4.4 The current development on site should be considered as the base line for the ES which includes the existing quarry, industrial use and waste management processes. Planning permission was granted for Area 5, 6 & 7 in September 2018 with reference number, NY/2016/0185/ENV and before that was area 4 with reference number NY2014/0113/ENV and both planning applications were accompanied by an ES that considered the past and future working of the quarry as well as areas applied for. The information provided in the ES is still relevant and where need be the field work has been updated in summer 2017 to spring 2018 for the application for area 8 to provide information on ecology, landscape,

restoration and aftercare, stability of the ground, archaeology and air quality including management of dust emissions. Further detailed work has been undertaken on area 8 during the summer of 2018 on the reserve estimate and design of the quarry working to enable this application to be submitted at the end of December 2018 and prepare an environmental statement.

1.4.5 The process of determining whether a proposed development requires an EIA application is called 'Screening'. The EIA Regulations permit for a developer to request a 'Screening Opinion' from the Mineral Planning Authority (MPA) to determine whether the EIA process should be followed. A formal Screening Opinion was requested for the development of area 5, 6 and 7 from the MPA in a letter dated 31st October 2015. This is included in Appendix 1.1. North Yorkshire County Council issued a formal Screening Opinion for the development in area 5 in a letter dated 17th December 2015. This is reproduced in Appendix 1.2. This opinion confirmed that an extension of the site required an EIA. A formal scoping opinion from the Council was requested on the 4th January 2016 and a response received on the 21st March 2016 for area 5 and it was decided to apply for areas 5, 6 and 7. The planning consultant advising the applicant has undertaken a screening and scoping exercise for this proposal to work area 8 and has concluded that an Environmental Statement is required to accompany the planning application. The covering letter with the application deals with the summery of the proposals.

1.4.6 The information which a developer is required to submit in the EIA process is presented in this Environmental Statement. The scoping, preparation and production of this Environmental Statement has been conducted in accordance with the latest Government Regulations and advice on good practice including:

- Town and Country Planning (Environmental Impact Assessment) Regulations 2017.
- Guidelines for Environmental Impact Assessment (Institute of Environmental Management and Assessment, 2004)
- Circular 02/99 The Environmental Impact Assessment (England and Wales) 1999
- Preparation of Environmental Statements for Planning Projects that require Environmental Assessments – DETR 3rd Impression 1999.

The Scoping Process

1.4.7 In order to determine which environmental issues for extension areas such as 5, 6 and 7 and future workings of the site, and what should be assessed in the Environmental Statement, a Scoping Request was prepared in January 2016 by

the agent and sent to NYCC, accompanied by a detailed Scoping Report. The Scoping Request letter has been updated to assist the MPA and included Appendix 1.3. The Scoping Report sets out the technical details of the proposal, perceived likely environmental effects anticipated as a result of the development and the assessment process by which these effects would be evaluated.

1.4.8 The aim of the scoping process was to identify key issues of concern at an early stage and to prepare these to be considered in the Environmental Statement. The impact of the development was discussed in the application for Area 4 as a global restoration scheme was prepared after extraction of all the stone in the reserve at Went Edge Quarry as shown on plan number 4 reference number WEQ/AR08/PA-04 for the existing quarry area.

1.4.9 A Scoping Response was issued by NYCC, dated 21st March 2016 for working extensions to the quarry. This is reproduced in Appendix 1.4. The applicant and the agent have reviewed this information and after screening and scoping the proposal in January 2018 have progressed the environmental statement for area 8 based on the screening opinion, the scoping opinion for Area 4 and Area 5, 6 and 7. The Mineral Planning Authority will screen and scope the application on receipt of the application using the applicant's scoping report.

A meeting held at Northallerton on the 6th July 2016 confirmed that the MPA were happy that the development of areas 5, 6 & 7 required an ES based on the scoping opinion issued for Area 5 as that was 4.3 hectares in area whilst the other areas were less than 2 hectares respectively. Earlier meetings held at Northallerton with the Council's own officers in November 2014 to discuss the overall restoration of the site and the extension of habitat and landscape from the plantation were discussed for the preparation of a future planning application and an accompanying Environmental Statement (ES). The advice received from NYCC has been used to prepare the reports for the planning application and ES for area 8 which is similar in area to areas 5, 6 & 7.

Likely Environmental Effects

1.4.10 The Scoping Response identified the following environmental topics for detailed assessment which are subsequently addressed in this Environmental Statement:

- Ecology;
- Landscape and Visual;
- Socio-economics;
- Noise and Vibration;
- Dust Emissions;

- Hydrology and Flood Risk;
- Ground Conditions
- Transport;
- Archaeology;
- Agricultural Land Classification

Assessment and Reporting Methodology

1.4.11 Following scoping and identification of environmental effects, technical assessments were carried out in order to predict potential effects associated with the development and where necessary to propose measures to mitigate the effects. These assessments were combined within the Environmental Statement.

The Environmental Statement

1.4.12 The Environmental Statement has been prepared to accompany an application for planning permission for the extension of the existing quarry by 9.7 hectares of which 8.6 hectares will be used to quarry limestone. The application has been submitted to the Local Planning Authority under the terms of the Town and Country Planning Act 1990.

1.4.13 Provision of environmental information through an Environmental Statement involves the compilation, evaluation and presentation of all the potential environmental effects of a proposed development. This together with post application consultation responses from statutory consultees and the public assists the decision-maker in considering and determining an application for that development.

1.4.14 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 require that an Environmental Statement should include at least the following information:

- A description of the development comprising information on the site, design and size of the development;
- A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;
- The data required to identify and assess the main effects which the development is likely to have on the environment;
- An outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice taking into account the environmental effects; and
- A non-technical summary of the above.

1.4.15 The EIA regulations require that the ES identifies likely significant environmental effects arising from the development. It is recognised in the EIA Regulations that not all environmental effects of a development are significant. However, those which are considered to be significant may constitute a material consideration in determination of the planning application. Effects are described as slight, moderate or substantial. Those effects identified as being moderate or substantial significance may be considered to be a material consideration in terms of the EIA Regulations.

1.4.16 The Environmental Statement reports the findings of the assessment of the likely environmental effects of the proposed development and comprises the following documents:

- Volume 1: The Environmental Statement (this document), which reports the main findings of the EIA and is taken into account by the Minerals Planning Authority in the formal EIA process, as defined by the EIA Regulations;
- Volume 2: Appendices, this accompanies Volume 1 and is taken into account by the Local Authority;
- Non-technical Summary, which provides an accurate and balanced statement of the key information presented in the Environmental Statement in a non-technical manner.

The Project Team

1.4.17 The team of consultants involved in the EIA are listed in Table 2.1. Each was selected for their specialist technical services and expertise in their respective fields.

Table 2.1: Consultants Involved in the EIA

Chapter	Consultants
1 Introduction	**Cromwell Wood Estate Company Limited**
2 Project Description	**Cromwell Wood Estate Company Limited**
3 Planning Policy Context	**Cromwell Wood Estate Company Limited**
4 Socio-economics	**Cromwell Wood Estate Company Limited**
5 Transport	**Northern Transport Planning Limited**
6 Air Quality	**Dustscan**
7 Ecology	**MRB Ecology**
8 Noise and Vibration	**S.D.Garritt**
9 Ground Conditions	**Key Geo Solutions and Cromwell Wood**
10 Hydrology	**Cromwell Wood Estate Company Limited**
11 Landscape and Visual Impact Issues	**CF Landscape Design**

12 Archaeology	**Archaeological Services.**
13 ALC	**Land & Restoration Management**
14 Restoration	**CF Landscape Design**

1.5 Content

1.5.1 The remainder of this volume of the Environmental Statement is structured as follows:

- Chapter 2 provides a description of the site and the development proposal and details on the EIA process and a description of the alternatives considered;
- Chapter 3 provides a description of the site and the development proposal compared with the planning policies for England through the national Planning Policy Framework and NYCC Minerals Plan;
- Chapter 4 provides brief details of relevant socio and economic issues identified,
- Chapters 5 to 13 consist of a topic by topic discussion of the potential effects of the project, the non technical language of the expert's reports and mitigation measures proposed or adopted into the project design to minimise the effects of the extension of the quarry by 9.7 Hectares.
- Chapter 14 concludes the Environmental Statement.

2. Site Description and Proposed Development

2.0 Introduction

2.0.1 This chapter describes the proposed extension of the quarry and site development, its components and design and describes the proposed methods of operation.

2.0.2 The chapter also provides a description of the mixed use development which exists on site and which is also assessed for any environmental effects in the ES, as cumulative effects of the site operation.

2.0.3 A consideration of the alternatives considered as part of the proposals is also included, in line with the requirement of the EIA Regulations.

2.1. Site Description

The site is 9.7 hectares (23.5 acres) in area 8 and consists of one arable field to the east of the operational quarry. To the west are the industrial estate and the existing quarry. A site context plan is provided in plan number 2 (WEQ/AR08/PA-02), the aerial photograph and a more detailed site boundary plan provided in drawing entitled location plan 1 (WEQ/AR08/PA-01) in appendix 2. The approximate grid coordinates of the site are SE500173.

The drawings are as follows and are located in appendix 2;

Plan 1, WEQ/AR08/PA-01 – Planning Application Area Edged Red
Plan 2, WEQ/AR08/PA-02 – Planning Application Area
Plan 3, WEQ/AR08/PA-03 – Existing Planning Permissions for the Site Layout May 2015
Plan 4, WEQ/AR08/PA-04 – May 2017 Survey of the Quarry with Application Area
Plan 5, WEQ/AR08/PA-05 – Excavation of Limestone in Phase 8 A
Plan 6, WEQ/AR08/PA-06 – Excavation of Limestone in Phase 8 B
Plan 7, WEQ/AR08/PA-07 – Excavation of Limestone in Phase 8 C,
Plan 8, WEQ/AR08/PA-08– Excavation of Limestone in Phase 8 C1,
Plan 9, WEQ/AR08/PA-09 – Backfilling to a Lower Level in Area 8
Plan 10, WEQ/AR08/PA-10 Restoration of the Quarry with Backfill in Phases 6 and 8C1,
Plan 11, WEQ /AR08/PA-11 Longitudinal Section through Area 8,
Plan 12, WEQ/AR08/PA-12 Total Extraction Design for Quarrying Limestone,

Plan WEQ/REC 15-06 Typical slope construction against the face with inert material, Plan WEQ/REC 15-07 Comparison when using only quarry material and inert waste, CF/MWE/275 – 9 Restoration of the Site with Side Slopes.

2.1.1. The site is located approximately 1.2km to the east of the village of Wentbridge, 0.7 km to the east of the A1, 1km to the west of Kirk Smeaton and 0.05km to the south of Brockadale Plantation SSSI.

2.1.2. The site is accessed from Went Edge Road by a dedicated access road into the site that has been covered with tarmac and white lined to the access gate to the quarry offices and weighbridge and then on to the relocated industrial estate in the floor of the quarry. Refer to plan number 2 with drawing reference WEQ/AR08/PA-02 that shows the area of the industrial estate edged brown, the current yards washed brown, the land under the applicant's control edged blue and the planning application area edged red. The dashed red line shows the access route from the planning application area to the B6474.

2.1.3. The site is bordered to the west of area 7 and north by Brockadale plantation a wooded valley which is the escarpment of the limestone outcrop where the land falls away to the woodland plantation on the valley side where the course of the River Went flows through and the pasture land in the bottom of the valley.

2.1.4. The Area 8 site is a 9.7 Ha, 25 acre site, within land that is owned by the applicant whose director is the owner of the quarry and the industrial estate. The total area of Went Edge Quarry is 20 hectares and is located to the north of Went Edge Road. The industrial estate located within the quarry is 5.71 hectares refer to plan number 2 (WEQ/AR08/PA-02) The extension is a 48% increase in area but the restoration of the slopes and base of the quarry will be at a rate of 2 Ha per annum so there will be 20 Ha operational at any one time which is a 10 % increase in terms of disturbed land as restored areas should replace the phase being worked in area 8.

2.1.5. The site was historically a lime works and quarry to extract limestone and then became an industrial estate where commercial vehicles were broken for spare parts. The buildings are of a steel portal frame construction with steel sheeting painted in green on the elevations and roof and are now located in the base of the quarry.

2.1.6. The site has been divided into two parts, one where the industrial estate is and the other being the quarry and the waste recycling centre in the base of the quarry. The industrial estate is now in the base of the quarry at a level of 26 metres aod and the quarry faces at the surface are at a level of 55 metres aod which screen the industrial site from the south on the B6474, Went Edge Road.

The industrial look of the site has been completely removed from the sky line and is a direct benefit of the quarrying activity. The quarrying has allowed funds to be set aside for the industrial estate to be relocated and the land that was occupied at the surface remediated and the material recycled as secondary aggregate.

2.1.7. The site is screened from the south along the B6474 by a long thin bund of topsoil which has been planted with trees and a hedgerow has been planted along the side of Went Edge road. Currently area 6 and 7 is screened from the east by a bund of subsoil and an outer bund of topsoil both of which will be relocated to the east side of the new extension area 8 alongside the boundary. Refer to plan number 4 with reference number WEQ/AR08/PA-04 that shows the soil bunds on the boundary of the site within the application area. The soil bunds will be 2.5 metres high and have slopes of 1 in 2 on the outer edges and 1 in 1.5 on the inner slope. The area adjacent to the access road within the standoff to the site will be used to store soil stripped off the field in phases from Areas 5, 6 & 7 and used for screening. The soil stripped off area 8 will be used in the same way to screen the working from views on Went Edge Road when driving west to the A1. Any additional soil stripped will be stored in the base of the quarry for restoration and sale. The restoration scheme does not require topsoil and subsoil where calcareous grassland is to be sown as the limestone fines will provide the soil cover.

2.1.8. The southern part of the site alongside Area 8 will be used for soil storage and accommodate a track within the site to maintain the bunds. The agricultural access off the B6474 will be retained to allow agricultural and horticultural machinery access off the B6474 without coming onto the operational parts of the quarry. The limit of extraction to support the B6474 will be 30 metres to the boundary of the field with Went Edge Road and the standoff used for soil storage. The geotechnical assessment in appendix 6 has concluded that loading the surface with soil will not affect the factor of safety of the limestone face before it is tipped against with the supporting buttress of inert waste and limestone fines. The slope sections are shown on WEQ/REC 15-07 that illustrates the slope profile if only quarry fines are used when compared with the use of inert waste on the slope before covering with limestone soil.

2.1.9. The extension area demoted as Area 8 will be used for mineral extraction and the mobile plant comprising of a crusher and screens will follow the advance of the face east ward in Area 7 as limestone is worked in two lifts of quarrying in that area. The first lift will be to remove the weathered limestone down to 3.5 metres from the surface and then extract the harder beds in one operation by blasting the limestone into a blast pile for the excavator to work off. The mobile plant will be located in Area 7 and then 8 in the base of the quarry once the limestone bed is down to 52 metres aod from 56 metres to afford some screening and

attenuation from noise and dust whilst drilling the limestone. The existing quarry houses a waste recycling area and a sand washing plant to make graded sand. The wash plant has been located in the ROMP area where limestone has been removed and has been located in the north east corner of the quarry. Refer to Plan Number 4, drawing number WEQ/AR08/PA-04 that shows the wash plant and industrial estate which is currently used for operations that are ancillary to quarrying. The waste recycling currently takes place in the industrial area within the Environmental Permit area of the waste management operations as the waste can be screened and crushed with a mobile plant. The operator is currently applying for a permit to use the new wash plant and extend the permit area to include the quarry faces for the deposit of engineered fill recovered from the waste operations to restore the quarry to a lower level scheme. The new plant can be used for washing secondary aggregates from the processing of construction, demolition & excavation waste (CDEW).

2.1.10. Access to the site comprises a two lane entrance road from Went Edge Road with an office, weighbridge, wheel wash and a workshop within the industrial estate and within the planning permission area of the Interim Development Order permission submitted for review in July 2011 and granted on 26th January 2017 with reference number NY2010/0317/MRP or C8/45/13/AB/PA. A new access road has been granted planning permission with reference number C8/2018/0374/CPO on 16th November 2018 that is around area 6 and it has been constructed to the boundary of the site and covered with tarmac. Access to area 8 will be through the existing quarry and the existing haul road that is now sealed and drained will be used in the northwest corner of the existing that has been upgraded with new edge protection, a rock fall zone and widening to allow two wagons to pass each other. Refer to plan number 2 showing the application area which includes the road which has planning permission to carry quarry material to the B6474. The route is shown with a dashed red line as the area already has planning permission to carry stone to the public highway.

2.1.11. In the base of the existing quarry are yards for the various quarry products, a saw shed for processing block stone, the stockpiles of raw feed for the sand plant and finished aggregate product of various sizes. Refer to plan number 4 (WEQ/AR08/PA-04).

2.2. Proposed Development

2.2.1. The proposed mineral extraction and restoration of the site is shown on plan numbers 1 to 12 (WEQ/AR08/PA-01 to WEQ/AR08PA-12 in appendix 2. Plan number 3 shows the planning permissions for the site. Plan Number 4 the current situation, plan number 5 shows the extraction of Area 8A, plan number 6 shows

the extraction down to 20 metres aod in Area 8B, plan 7 shows the extraction of stone in area 8C and plan 9 in the area 8C1 near the electricity pylon, plan 10 shows the restoration scheme for the site, plan 11 a long section and cross sections through the quarry area 8 and the phasing, plan 12 the total extraction of limestone within the area 8 extension that illustrates the standoff distances on the north and south sides and REC15/06 and REC 15/07 cross sections through the tipping of engineered fill.

2.2.2. The site will be stripped of topsoil which on average is 240 mm thick and the soil will be placed in store on the southern boundary of the field as shown on the plans. 300mm to 500 mm of subsoil will be removed and placed in the standoff and on the eastern end of the application area as a screen bund and covered with topsoil and seeded to grass.

2.2.3. The limestone is between 0.5 and 0.8 metres below the topsoil level and is undulating due to the bedding planes and the shallow anticlines in the stone. The limestone is weathered at the surface down to 3 to 3.5 metres so it is proposed to remove this limestone in advance of the main bed to prevent rock fall into the floor of the quarry and to screen the area when drilling takes place as it will be located on rock head 3 metres below the surface and the screen bunds will be 2 metres high so the drill mast should not be visible.

2.2.4. The main access road into the standoff will be retained. The new road will be used as it is nearer to the A1, further away from Kirk Smeaton. The new road joins the existing access in the quarry and the hard standing in this area will be protected so as to minimise the risk of mud and debris being brought out onto the main highway after the trucks have travelled through the wheel wash. The company have their own road sweeper which is used to clean the access road and Went Edge Road.

2.2.5. All of the activities are located in the quarry and apart from drilling and the soil excavations the operation cannot be seen from the surrounding land. The mineral will be crushed and left in stockpiles on the floor of the quarry. The soil stores are the only material that will be above ground surface and the bunds will be shaped up to blend in with the field and the topography.

Other Operations on Site

2.2.6. An assessment of the risk of contamination on the application area has been undertaken and it is clear that a phase 1 and phase 2 report of the site is not required as the land has been used solely for agriculture and there is low risk of possible contamination related to the former use. The old industrial estate is outwith of the application area and the history of this site would seem to be ancillary to limestone quarrying until 1970 and then as an industrial estate until

the May 2016. There have been some contaminative uses on the industrial site such as storage and breaking vehicles but the operations have been undertaken in accordance with the Environmental Permit for the End of Life Vehicle Regulations and the site was covered with concrete for a substantial part of the area. The site was remediated after the buildings were removed and then soils analysed and assessed for waste codes and found to be soil and stones so the material was processed as secondary aggregate.

2.2.7. There are a number of operations on site in the new industrial estate three of which are related to the quarrying such as the sawing of stone won from the limestone beds, processing of limestone for sand and aggregates, concrete mixing and a mortar plant. The sand is washed from the limestone fines that are a product of the crushing and screening to produce sized aggregate. There is a mortar plant, a concrete batching plant and a storage yard where the limestone grit sand and <14mm clean are kept for use in the plants. Block stone is also stored on the yard to be collected by the fork lift truck to take to the circular saw.

2.2.8. The site also houses a plant yard that is occupied by a company who supply stone from the quarry to the construction and maintenance sectors. The applicant company also have 3 of their own tipper trucks at the site. There is a plant maintenance shed and undercover parking areas. The quarry also houses a waste transfer station with new concrete bays and a picking station for the processing of construction and demolition waste, glass and ceramics which are crushed, screened and can be washed to produce high quality secondary aggregates for construction and glass. At present there are no residues of fines as what is produced is inert and is used with the limestone to produce a construction fill. In the future the fines will be washed to produce sand for the construction sector.

2.2.9. Permission does exist to erect buildings within the quarry outside of the industrial estate for a use ancillary to quarrying for a plant maintenance workshop and storing minerals under permitted development rights.

Consideration of Alternatives

2.2.10. Went Valley Aggregates and Recycling Limited have considered alternatives for the provision of aggregates, sand and building stone for the company operating the site. The existing quarries are owned by competitors and there are no opportunities to obtain reserves or raw feed from these quarries as it would place the applicant at a disadvantage. The site is an existing quarry with reserves under planning and the extension to areas 6 & 7 currently being worked provides for the site to be a rectangular shape that has allowed a good restoration scheme and move the industrial estate into the base. Area 8 will provide significant

reserves of limestone for the business and allow medium term planning for the quarry as it now has new processing equipment and quarry plant to enable restoration to continue on the western side of the site.

2.2.11. The company are aware that the neighbouring quarries at Womersley, Darrington Barnsdale Bar and Hampole have sought additional reserves from local farmers and estates. Options have been signed in the past by the companies who operate these quarries but the reserves of limestone have gone through the Minerals & Waste Plan or future reserves have or are being estimated. The reserves in other areas will require development in green fields which does not conflict with Green Belt policies. There is an existing quarry at Went Edge and there are 5 million tonnes of reserves so it is sustainable to work the reserves as an extension to the quarry. There are good road networks to the market so little impact on local roads, the site is producing a wide range of products and also recovering waste for use in the construction sector and there is an overall concept plan for the restoration of the site that will enhance the biodiversity of the area and complement the SSSI. The cumulative impact of quarrying in the area has been assessed and discussed in the LVIA for area 8 and shown on plan number CF/WE/526/5 in appendix 8. An LVIA has also been completed recently for the new access road and the existing quarry which is included in appendix 8.

2.2.12. The quarry has planning permission to work the limestone where the industrial estate was located and the option of closing the estate was considered by Meakin Properties but the owner realised the job opportunities that would be curtailed with closing the industrial estate so decided to invest in relocation to the base of the quarry, with new roads and infrastructure including a new power supply. The companies also employ up to 30 people and they would have had to relocate which at the present time is not suitable due to the upturn in the economy after 7 years of recession.

2.2.13. The industrial estate has been relocated into the base of the quarry now there is sufficient room in the footprint of the quarry floor so the reserves under the estate have been worked in the original planning permission granted in April 1947. The footprint of the industrial estate has been considered for the occupied areas before quarrying recommenced in 1990. The plan is included, reference number 4 (WEQ/AR08/PA-04) in appendix 2 that shows the industrial area edged brown. There has been a programmed relocation of the businesses into new buildings below the surface of the land over the past 3 years.

2.2.14. The option of “do nothing” has been considered where no more reserves are sought and the site is restored with a lower level scheme of tipping against the faces and then running a waste transfer operation and using the industrial estate. The extraction of the remaining limestone reserves would not take place and the

reserves in the field would be lost after the site is restored. The quarry would be a rectangular shape with the extension of Area 6 that is to be backfilled to the surface and a base in the existing quarry that is large enough to accommodate the industrial buildings and the transfer station. The reserves in area 8 can be worked east until the field becomes thinner beyond the electricity transmission line. To leave these reserves after the quarry has worked areas 6 and 7 would be against the proposed policy on the Minerals and Waste Development Framework of North Yorkshire County Council, the North Yorkshire Moors Council and York Council as it has been identified that there is a shortage of reserves for magnesium limestone and a separate land bank is discussed in the Options and Issues document consulted on between February and April 2014. The areas of limestone that are being worked at the site have been promoted by the applicant and the quarry has been accepted in the recent allocations for sites published in 2017 and to be reviewed by the Planning Inspector by January 2019. Area 8 has not been submitted as part of the quarry as it was considered a longer term reserve but the construction sector has grown quickly due to the housing need and the use of brownfield land. The reserves in area 6 are not as large as originally estimated due to the floor of the limestone rising leaving only 20 metres of stone being extracted.

2.2.15. The floor of the quarry can be worked in the existing planning permissions down to 20 metres aod from the current level of 26 metres aod. The older planning permissions allow working to the base of the Permian Magnesium limestone. The planning permissions are shown on plan number 3 with drawing reference number WEQ/AR08/PA-03.

2.2.16. It is clear that alternative sites would be on land that is not near an existing quarry and currently under agricultural use and would not be a sustainable option when there is an existing quarry at Went Edge. There are five quarries in the area which provide competition and go some way to meet the demand for Magnesium Limestone. Due the width of the exposure of Permian Limestone in the County quarries that work the stone are bound to be close together in areas of land where there is no development or large agricultural businesses as the Magnesium Limestone is exposed at the surface for less than 20 kilometres west to east from County Durham to Nottinghamshire.

Final Proposal

2.2.17. The quarry can be extended as part of a long term plan to work the remaining stone in the field to the east of the existing quarry after the industrial estate has been relocated to the bottom of the quarry in an area the same size as the existing footprint of the estate that would normally require planning permission from Selby District Council. The wash plant has been relocated outside the

industrial estate as it is part of the quarrying operation and ancillary to that use. From discussion with the MPA the final restoration of the quarry and consolidation of the planning permissions would allow the County Council to deal with the relocation of the industrial estate as part of the overall concept for the quarry and restoration of the site. The MPA would work closely with Selby Council to conclude the final restoration of the site including area 8 on the same scheme of a lower level restoration with calcareous grassland and improvement of the bio diversity adjacent to Brockadale Plantation. This scheme is shown on plan WEQAR08-10 and the "draft total excavation design" plan 12, WEQ/AR08/PA-12 in appendix 2 and provides for a further 4.9 million tonnes of stone in this application. The extension into Area 8 provides for the long term plan to extract all the reserves of limestone in the quarry area by a last extension to the existing working between the access road and the eastern boundary and transmission line. There are reserves to the east of the quarry in the large field and no more limestone to the west of the access road. Area 8 contains the only viable reserve of limestone to the east as the land to the west of area 6 and the new access road shows evidence of being used as a borrow pit when the A1 was being built. As work continues in areas 6 & 7 it is an appropriate time to apply for planning permission to work the field to the east so that it can be restored back to a lower level and area 6 back to the same condition as an arable field as material is available from the waste recycling operation and the processing of fines from the quarry.

2.2.18. It is proposed that recyclable material from the waste transfer station such as brick, concrete and sub base stone will be recovered, where possible, and stored in the base of the quarry on the adjacent land within the industrial estate edged brown on the plans and will be sold as secondary aggregate. The fines from the operation and excavation waste will be processed and made ready for use as engineering material to build the slopes in the quarry up against the faces when in the final position. The fines together with excavation material that cannot be used as quarry product will be used for engineering a slope against the face of the worked out area as part of the restoration as shown on plan number WEQ/AR08/PA-10, the long section and cross sections on plan number WEQ/AR08/PA-11 in appendix 2.

2.2.19. The fine construction material from the waste transfer station and the quarry waste will be used to infill against the faces in a programme of compaction and engineering works for phased low level restoration.

2.2.20. Once the quarry has been worked to the full extent as shown on plans 6 to 9 the site will be considered for infilling with inert excavation and construction material to the surface for a distance of between 60 metres and 80 metres from Went Edge road for grassland and woodland with a slope of 1V in 2.5 H to the base of

the quarry. The slope will have a footprint of 80 metres and will be 30 metres high from the base to the surface. The restoration of field area 8 would be dependent on waste suitable for engineering purposes being made available and due to recycling initiatives the amount of construction waste is likely to fall over the next 10 years. At the present time the restoration is from the top of the proposed face 30 metres from the road to the base with a 1V in 2.5 H Slope as shown on the plan WEQ/AR08/PA-10 and the same slope on the north side. An audit of fines created by quarrying will provide 30 % of the material required for the slope and the waste recycling centre has the ability to attract excavation waste as well as providing recovered engineering fill.

2.2.21. The area for extraction will be stripped of soils over phase 8A and the soil will be used as a screen so that the extraction of limestone from the surface down to 3.5 metres will be within the screen mounds and will not be visible from outside the site. Soil stripping will advance by 30 metres in front of the excavation of weathered limestone and 60 metres in advance of the drilling of the rock head to the base of the quarry.

2.2.22. A comprehensive forward planting scheme has been agreed for the planning permission NY/2010/0158/FUL for area 3, NY2014/0113/ENV for area 4 and NY2016/0185/ENV for areas 5, 6 & 7 along the boundary of the site near to Went Edge Road and the side of the access road. The planting scheme and management of the aftercare has been drawn up into a legal document under Section 106 of the Town and Country Planning Act 1990. The same scheme will be used and extended into area 8.

2.2.23. Upon completion of the proposed operations in area 8 this area and Areas 3, 4, 5 and 7 will be restored to an improved landform to provide a lime dust rich soil with some areas of open face. Area 6 will be restored to the surface to provide a field at the same level as the surface.

Main Excavation

2.2.24. The reserve is 2,375,000 cubic metres which is 4,900,000 tonnes and the aggregate will be taken from the surface to the base at 20 metres, a depth of 35 metres. The middle bed will be inspected for large blocks and then the blast designed so that the full section of the face is blasted to provide large blocks of stone that can be picked out for building stone. The remaining stone is then crushed and screened after the large blocks have been removed.

2.2.25. The operator has been using a bull dozer with a ripper mounted on the rear of the machine to rip the stone to break up the top bed so that it can be loaded before drilling and blasting is required on the lower bed. This can provide more regular shaped blocks for the building stone business. The limestone near the surface in

area 8 is weathered so the stone will be excavated by a hydraulic back actor before the lower competent beds are drilled and blasted from the surface minus 3.5 metres.

2.2.26. Investigative drilling has taken place in the limestone strata down to a depth of 28 metres to assess how blocks of limestone can be retrieved from the blasted pile and whether they are damaged. To date the large blocks that come from the face above the blasting agent where the stemming is, have been found not to be damaged as the force of the blast is out of the face at the bottom and the beds above fall from the face into a pile.

2.2.27. The processing plant is located in the base of the quarry and will follow the advance of the face to the east. There is no overburden in the quarry so there is no need to allot space for overburden storage. There is an amount of limestone fines produced but these are being washed now in the plant and provide a good quality sand sized particle that is used in the concrete block making businesses around Selby. There is still an excess of limestone fines from crushing and also the fines cake from the wash plant so if the volume worked is 750,000 tonnes per year up to 150,000 tonnes per annum will be available for restoration leaving 600,000 tonnes for sale.

2.2.28. Excess fines are used as a store for the restoration of the site and placed against the northern and south side faces for the time being. The fines will continue to be used that are below the coarse sand fraction for soil cover. A trial is taking place with the fine limestone cake being mixed with bonded resin to produce reconstituted stone for aggregate production.

2.2.29. Went Valley Aggregates and Recycling Limited will excavate the quarry in area 8 in 3 phases, 8A to 8C1, to allow soil stripping to be kept to a minimum area until it has to be stripped for drilling as shown on plan number 4 with reference number WEQ/AR08/PA-04 in appendix 2.

2.2.30. The initial excavation will strip 3 hectares of soil which will provide a store of 7,500 cubic metres of topsoil and 2,000 cubic metres of subsoil. The limestone exposed is 1.5 million tonnes. The soil strip and excavation will continue east in the next three phases releasing the same amounts of soil to be put to store and the same volume of limestone as shown on plan numbers 5 to 7.

2.2.31. Limestone fines will be placed temporarily against the faces on the north and south side as store for the wash plant and also act as a rock fall zone to cushion any rocks that in an unlikely event fall from the face. More material will be placed against the north and south faces to form the restoration slopes as quarrying extends east in area 6 to form the slopes and then be backfilled with secondary engineering fill and capped with lime soil and subsoil. Topsoil will be laid back

over to create an arable field for cultivation near to Sayles Plantation. Once areas on the south side are available for restoration in area 5, 4 and 3 then the slopes will be constructed in inert waste and limestone fines. At the present time limestone fines are stored against the exposed face to support it, prevent rock fall and as storage for the wash plant.

2.2.32. The quarry has a long reach excavator to clean down the faces from the upper bench level at 40 metres aod and pass the material down to the crusher. The limestone of the blast pile will be loaded by a 65 tonne excavator into the jaw crusher located in the bottom of the quarry. The jaw crusher is located near to the secondary crusher and screens so processed material is piled in the base of the quarry.

2.2.33. The front end loaders move the processed material to stockpiles in the base of the quarry so that the various sized limestone products can be despatched. The quarry produces cobble, 40 mm clean, 20 mm clean, 14 mm clean, <10 mm clean and crusher run. The front end loader fills the trucks and then the load is transported to the wheel wash and weighbridge area for weighing, checking the load and then sheeting up before leaving the site. Refer to the photographs in appendix 3.

2.2.34. This initial process of excavating the topsoil and lifting the subsoil will take 6 weeks in the first phase of soil stripping to release the longitudinal phase in area 8 from area 7. The excavation of the first cut will take 75 weeks as it is being worked from the open face in area 7 and then into area 8. During this period the topsoil heap and subsoil heap on the south side will be shaped up to screen the workings and then planted with grass seed and trees.

2.2.35. The excavation of the limestone will be from the blasted pile where two bench levels will be established one at 50 metres aod, 3.5 metres below the surface and one at the floor of the quarry at 26 metres aod. The limestone in the floor from 26 metres aod to 20 metres aod will be removed later as the crusher and screen move away with the face. The floor will be lifted in two benches each of three metres height to extract block stone and then the area backfilled with limestone dust and overburden.

2.2.36. After the face has been excavated from the surface to the rock head the hard limestone will be blasted and loaded from the blast pile and from the 50 metres aod level the face will be scaled down to remove any loose rock before the lower level of the blasted pile is removed. The face will be drilled the full depth of the limestone and then stemmed with ANFO from the design of the blast by the engineer to minimise fracturing and eliminate fly rock. The depth of the face lends

itself to a design where the explosive is placed in the base of the hole +2 metres and then stemmed with fine limestone drillings to heave the limestone.

2.2.37. When the backfilling operation continues in areas 4 and 3 the loose fines from the quarrying activity will be placed against the toe of the face to provide a rock fall zone and cushion for any rock fall. The fines and the residue from the recycling centre in the base of the quarry will be laid in the toe and the slope built up at a gradient of 1V in 2.5H and sloping at a shallow gradient back to the face.

2.2.38. This process will be repeated until the limestone fines and recovered material is placed against the face to the surface or to leave a depth of exposed face where the bedding is in good condition.

2.2.39. The maximum depth of the excavation is 36 metres on the southern side, so the average depth of the quarry is 34 metres or at a level of 20 metres aod from the surface level which ranges in level from 56.5 in the north east corner to 53 metres aod on the south side. The limestone is dipping to the east so the levels of the floor of the quarry are shown on the excavation design plan number 12 with reference number WEQ/AR08/PA-12.

2.2.40. The floor of the quarry will be filled with fines from the limestone operation which have been processed and washed and is discard due to the particle size. The fines will fill all the joint sets in the floor and provide a cushion for the marl and Permian sand in the quarry floor.

Earthmoving Equipment (Main Excavation)

2.2.41. It is proposed to use a hydraulic excavator with a 4 cubic metre back actor bucket with long reach to load the stone from the top of the blast pile whilst cleaning down the face at the 50 metres aod level and passing the stone into the jaw crusher and then scale down the face. The long reach excavator may pass limestone to the other excavator to load the crusher when scaling down. The excavators will work off the pile at 40 metre level and then remove the limestone down to the floor of the workings.

2.2.42. Soils will be removed in advance of the limestone extraction by an excavator and a 25 tonne capacity articulated trucks, with an attendant D6 LGP dozer to shape up the soil stacks in layers as the soil is spot tipped.

Quarry Operation

2.2.43. The limestone reserve is 4.9 million tonnes with a further 43,000 cubic metres of topsoil and 33,500 tonnes of subsoil to move. The limestone is processed in to a wide range of products for the construction industry such as pipe bedding, washed limestone sand, cobble, 25 mm clean, 40 mm clean and crusher run 25

mm down. The process plant is a jaw crusher, a secondary crusher and then a number of screens to divert material to the product stockpile. Product is moved by a Doosan front end loader to the various stockpiles. The front end loader also loads product into the trucks which are loaded in a designated area near the stockpiles. The other Doosan front end loader takes fines to the stockpile for the raw feed to the sand washing plant.

2.2.44. The trucks usually have self weighing tipper bodies on but the product is weighed on the existing weighbridge at the site entrance which will be calibrated prior to use. Entrance to the quarry has an office for the administration and record keeping, the quarry managers office where the health and safety records, the blasting reports, the environmental information and the machine hours sheets are logged and the weighbridge office where the trucks are weighed, the customer, driver, registration number, noted and the truck checked for a safe load prior to sheeting up.

Working Hours

2.2.45. It is proposed to work limestone under the same hours as the existing planning permissions which are from 7.00 to 19.00 weekdays and 7.00 to 13:00 on Saturdays. Saturday afternoon and Sunday would be used for servicing and repairs. There would be no mineral working on Bank Holidays. Repairs and maintenance will not be carried out between the hours of 22:00 and 07:00 the following day without prior permission from the Mineral Planning Authority. These are the hours that are granted on planning permission C8/45/13N/PA granted on 23rd December 1996, the IDO permission C8/45/13K/IDO reviewed on 17th June 1994 and the Schedule 14 ROMP Review issued on the 26th January 2017 with reference number NY2010/0317/MRP. The despatch of limestone from the site takes place between 07:00 and 17:30 and it is proposed to continue closing the quarry to exports at 18:00 at the latest on Monday to Friday and 13:00 on Saturday. From the traffic assessment it is clear that most of the deliveries are until mid afternoon and then fall away as the trucks deliver the last load to the customer site and then return to the quarry the following day. The increase in activity means that wagons do come to get a load at the end of the working day and then go back to their own yard to deliver in the morning so there is a reduction in traffic to the quarry in the morning.

2.2.46. The working duration will be 5 to 8 years including set up and landscaping of the soil mounds, the rate of output depending on the construction market. The limestone products are used for drainage, bulk fill on previously developed sites, hard core sub base, gabion walls and fine aggregate for the concrete block making industry. Agricultural lime is also produced.

2.2.47. There is also the limestone to remove from the boundaries of the existing site into the extension which has been estimated at 100,000 tonnes. This will be drilled and blasted once the electricity cable and soil mound have been removed on the eastern boundary of area 7 adjacent to the application site.

Site Programme

OPERATION	VOLUME	DURATION
Initial soil strip	5,000 BCM	8 Weeks
Main excavation in 3 phases	8,000 BCM/Week	300 Weeks
Placing mineral waste and fines	3000 BCM/Week	300 Weeks
Restoration of the site on a phase by phase basis from the existing quarry.		450 Weeks
Site establishment/demobilisation		4 Weeks
Total enabling works duration		600 Weeks

2.3 Cumulative Effects - The Mixed Use Development

2.3.1 Following the quarrying the site will be restored using fines from the waste recycling centre and the dust from the limestone working to place material against the face. Fines from the recycling centre have not been used in the restoration of the northern face as the area is near to the SSSI and the face has been supported by a large stockpile of limestone dust which is now the feedstock for the wash plant.

2.3.2 The mixed use development on site is the industrial estate which is for a B2 and B8 use, the saw shed and stone yard, the storage yard and the waste transfer station. There is no end of life vehicle activities on site at the present time apart from three parked vehicles and an item of plant located in one of the new yards. A yard is being prepared for the ELV area in the base of the quarry. The quarry does have planning permission under PD rights to build sheds ancillary to the quarrying operation within the ROMP area on the yard at formation level and these will now be built in the floor of the quarry after agreement with the MPA on the location, dimensions and height, albeit 30 metres below the surface. A portal frame shed has been built in the quarry in the industrial estate adjacent to the access road of the yard for plant and machinery storage for the quarry.

2.3.3 The industrial estate has been developed in the base of the quarry and the quarry expanded in area to form a trapezoidal shape north of Went Edge Road that is 600 metres long and 350 metres wide. The relocation of the industrial estate will require a planning submission to the Mineral Planning Authority, North Yorkshire County Council to regularise the planning matters for the industrial estate as part of the overall restoration concept for the site and the applicant will work closely with the MPA and Selby District Council. The applicant has completed the mineral extraction to accommodate the scheme to erect industrial buildings and yards in the footprint of the permission granted in 1947 for Smeaton Lime Works now that quarry working has advanced away from the footprint. Refer to plan number 4.

2.3.4 The site is accessed from the existing access with Went Edge Road, which has been improved as part of the overall development of the quarry. The internal access arrangements within the quarry provide access to the industrial estate, the waste recycling centre and the quarry. The applicant is undertaking a feasibility study on the amount of construction excavation and demolition waste in the region for infilling the field in area 6 adjacent to Went Edge Road and Sayles Plantation from the new access road to the existing access road to bring the quarry back to the surface levels for the field. At present 25% of the quarried limestone is fines and can be used for soil cover over inert excavation waste.

2.3.5 The main objectives of the scheme since the owner of the land became involved in 2012 have been to achieve a high standard of design in the quarry, well landscaped boundaries to the site, parking areas in the industrial estate, functional service areas for the machines and an open feel to development with existing wildlife areas retained and enhanced and perimeter vegetation retained where possible.

2.3.6 The current buildings have a functional design of steel portal frames and steel sheeting for cover. A plan is included for completeness showing the current industrial estate and the footprint of the estate edge brown on plan number WEQ/AR08/PA-04 but does not form part of this application. The Environmental Impact Assessment has reviewed the future plans of the quarry and the after use of the exhausted areas. In particular the landscape and visual impact assessment, the ecology report and the agricultural land classification has considered the long term plan which has resulted in the restoration scheme for the areas 3, 4 and 5 and 7 parcels of land being to a low level to accommodate the buildings and waste management area within the quarry that have planning permission in perpetuity.

2.3.7 The layout for the estate allows for the retention of the existing screening along the western boundary next to the new access road as well as opportunities for

additional planting through a detailed landscaping scheme agreed for the quarry planning permissions under a Section 106 agreement of the TC&P ACT 1990. The concept for a lower level restoration and planting scheme has been extended into area 8 with calcareous grassland and woodland planting.

3.0 Planning Policy Context

3.1 Introduction

3.1.1 This section of the Statement considers the planning policies and legislative framework, which together provide the context against which the application will be considered. It identifies the legislation of most relevance to the application and sets out those national, regional and local policies, which are contained within statements of Government policy or the development plan for the area.

Legislative Framework

3.1.2 The Application has been prepared in accordance with the requirements of the Town and County Planning Act 1990 (the 1990 Act) as amended by the Planning and Compulsory Purchase Act 2004 and supplemented by the Planning and Compensation Act 1991 (the 1991 Act) and subsequent regulations.

3.1.3 Full account has also been taken of the Town and County Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017 in preparing the accompanying Environmental Statement (ES).

3.2 National Policy

Sustainable Development

3.2.1 The Government's UK strategy for sustainable development, Securing the Future 2, published in March 2005, set out how the goal of sustainable development should be pursued by Government, businesses and individuals in an integrated way to provide:

- an economy that delivers high levels of employment;
- a society that promotes sustainable communities;
- the protection and enhancement of the physical and natural environment; and
- the efficient use of resources and energy.

3.2.2 The general principles of sustainable development have been defined in more detail in relation to mineral operations in earlier Mineral Planning Guidance Notes 8, 9 and 14 and advice on emissions from mineral working in Mineral Policy Statement 1 and 2. Research for these guidance notes was comprehensive and

has been used in the online planning guidance that accompanies the Minerals Policy in the National Planning Policy Framework 2018. The guidance is now online at the Planning Portal and is updated regularly, consequently the advice is up to date and based on the latest research on noise, air quality, traffic generation and protection of the environment.

3.2.3 Further guidance on dust emissions has been prepared by the Institute of Air Quality Management on methods of reducing dust emissions through good management techniques based on the potential sources of dust from mineral workings. The dust and air quality report prepared by Dustscan in December 2018 has used this Air Quality Guidance for this assessment.

3.3 General Principles

3.3.1 The Government's general statements of planning policy are set out in the National Planning Policy Framework and the Technical Guidance Note published in July 2018 which established the policies and principles that should be taken into account in the preparation of development plans and consideration of individual proposals. The planning policies are now updated on the Government's planning online database which covers all development. Waste management is still dealt with under the NPPW, the Waste Plan for England which has been published in October 2014. This is being revised at the present time but is mainly dealing with recycling rates and plastic packaging so the management of inert construction waste should remain the same. The waste management operation is not part of the application apart for the deposit on land for recovery purposes to provide restoration material for the slopes.

3.3.2 The NPPF "Delivering Sustainable Development" sets out the overarching planning policies on the delivery of sustainable development through the planning system with a presumption of favour of development. The Framework also recognises the economic value of development and how this can impact on local people through employment and standard of living.

3.3.3 In the preparation of this planning application and where appropriate, in the accompanying planning supporting statement, regard has also been had to the planning practice guidance and chapters 2, 6, 13, 15 and 17 where they are relevant to various aspects of the proposed development. Attention has been paid to on line guidance in relation to Green Belts, and in relation to nature conservation to obtain background information on the policies in the NPPF.

3.4 Minerals Policy

3.4.1 The key national guidance for mineral extraction is contained within paragraphs 203 to 208 of the NPPF and further guidance to mitigate the effects of mineral working and the restoration of a site is given in the online planning guidance.

3.4.2 Paragraph 203 recognises the importance of minerals to the development of the infrastructure in the country and to provide housing, to provide industrial minerals and energy that the country needs for a vibrant economy. Minerals are essential to the nation's prosperity and quality of life, not least in helping to create and develop sustainable communities. It also states that it is essential that there is an adequate and steady supply of minerals to provide the infrastructure, buildings and goods that society, industry and the economy needs, but that this provision is made in accordance with the principles of sustainable development.

3.4.3 Paragraph 203 of the NPPF advises that the Mineral Planning Authorities consider the use of recycled materials and mine waste for use as far as practicable as a contribution to the materials required for construction before the use of primary materials so that the best use is made of primary minerals when they are worked to conserve the nation's resources.

3.4.4 The use of secondary recycled material discard and fines together with mine waste are used in the restoration of quarries to bring land back into use which is sustainable development. The requirement to restore mineral workings on a phased basis has been a condition of mineral permissions being granted since 1982. This sets out the objectives of sustainable development for minerals planning. The paragraph sets out the criteria in accordance with the framework which minerals applications should be considered and these are:

i) To ensure, so far as practicable, the prudent, efficient and sustainable use of minerals and recycling of suitable materials, thereby minimising the requirement for new primary extraction;

ii) To conserve mineral resources through appropriate domestic provision and timing of supply;

iii) To safeguard mineral resources as far as possible;

iv) To prevent or minimise production of mineral waste;

v) To secure working practices which prevent or reduce as far as possible, impacts on the environment and human health arising from the extraction, processing, management or transportation of minerals;

vi) To protect internationally and nationally designated areas of landscape value and nature conservation importance from minerals development, other than in the exceptional circumstances;

vii) To secure adequate and steady supplies of minerals needed by society and the economy within the limits set by the environment, assessed through sustainability appraisal, without irreversible damage;

viii) To maximise the benefits and minimise the impacts of minerals operations over their full life cycle;

ix) To promote the sustainable transport of minerals by rail, sea or inland waterways;

x) To protect and seek to enhance the overall quality of the environment once extraction has ceased, through high standards of restoration, and to safeguard the long-term potential of land for a wide range of after uses;

xi) To secure closer integration of minerals planning policy with national policy on sustainable construction and waste management and other applicable environmental protection legislation; and

xii) To encourage the use of high quality materials for the purposes for which they are most suitable.

Further more it is recognised in paragraph 204(h) that the timely restoration of mineral extraction sites is imperative in the interest of environmental quality. Mineral extraction can be undertaken whilst the exhausted workings can be restored to after uses such as agriculture, forestry, nature conservation and open public space. This site will be restored to reflect the nearby habitat in the Brockadale SSSI, the existing use as grade 2 farmland and the industrial estate retained in the base of the quarry and landscaping maintained around the site. The long term plan is to restore the quarry to a lower level to provide for the estate and the waste recycling centre and fill the land in area 6 to a level so that agriculture can be undertaken. There is also the opportunity for forestry along the boundaries. It is unlikely the site will be open space apart from permissive paths around the northern part of the whole site adjacent to Brockadale Plantation when the northern face has been restored with some material tipped against it to provide a grassy slope to the base.

3.4.5 Paragraph 205 states that MPA's should give great weight to the benefits of mineral extraction in an area or region to the well being of the local population and economy in terms of jobs and wages". Of particular relevance to this specific application to extract magnesium limestone is the advice in the online technical

guidance on how the impact may be mitigated and controlled through planning conditions.

3.4.6 The proposed operations at the Went Edge site are planned to last until February 21st 2042 and this application will provide 6 to 8 years of reserves with an output of 600,000 tonnes per year whilst the longer term plan for the quarry is designed and discussed with the relevant authorities to include the continued extraction of all the reserves in the land holding and natural boundaries compared with the impact and the economic benefits to the local community.

3.4.7 Paragraph 207 requires MPA's to provide adequate and steady supplies of aggregates in the region by preparing a minerals plan based on the rolling average of 10 year sales. The Issues and Options consultation from the Joint Minerals and Waste team from North Yorkshire County Council, York City Council and the North York Moors Council on mineral planning and reserves anticipated that there is a shortfall of magnesium limestone reserves in the County most of which exists within the MPA's control in North Yorkshire and further reserves are likely to be released for working in the future in the area from Tadcaster to the boundary with Doncaster Council.

3.4.8 The extraction of limestone and the investment in the processing of the mineral in the quarry has lead to a wide range of high quality aggregates being provided as feed stock for the building products sector, the contaminated land regeneration sector and the building stone provision in accordance with national policy on sustainable development and the long term plan which the Area 8 extension application forms part of, is preventing sterilisation of a scarce national Magnesium Limestone resource.

3.4.9 Whilst there is no specific policy on building stone provision in the NPPF 2018 the research document on the Building Stone industry entitled Planning for the Provision of Building Stone (ISBN 185112 691 0) supported by English Heritage and BGS together with the recommendations of the study are still applicable to this application. The NPPF recognises the important part that building stone quarries play in providing a range of stones to maintain the character of the built environment in local areas. This quarry provides a cream limestone with a fine texture and the quarry has a reserve of large blocks suitable for sawing into lintels, jambs, cills and monumental stone. The reserve of hewn block stone in Area 8 should provide a further 20 years of supply to the saw shed if covered with limestone fines to protect it from the cold weather.

3.4.10 Planning policy is discussed in more detail in the planning supporting statement in section 6 on page 13. The environmental statement deals with the impact of

the quarry activity and the mitigation proposed for the operation and restoration of the site.

3.5 Landbanks for Hard Rock Quarries.

3.5.1 MPA's are advised that they should use the length of time that a land bank of aggregate minerals will last to provide rolling programme of at least 10 years of reserves. These land banks can be broken down into various types of stone so as to ensure that the properties of the stone and the end use are reflected in the land bank for that particular type, Carboniferous limestone located in the north western area of the County is used for coated roadstone, cement and high specification aggregate in concrete. Magnesium limestone is used for sized aggregate, compacted specified bulk fill on regenerated sites that have had a previous industrial use, drainage material, washed sand, filler in concrete products and also for agricultural lime. The County Council recognise that a land bank may be different for magnesium limestone to the carboniferous limestone and the chalk reserves in the northern part of the county. The magnesium limestone straddles the central section of the County from the Durham border to Nottinghamshire and Doncaster.

3.5.2 Large reserves of carboniferous limestone exist in the north western part of the County but the distance to market is further than the distance to Leeds and Bradford from magnesium limestone quarries on the eastern side of the County and the operators are able to use the motorway network. There are a number of quarries located along the A64. Most of the carboniferous stone is brought via the A65 or A660 unless carried by train from Swinden Quarry. Magnesium limestone provides materials in the County from the north into Teeside and south in the urban areas of North and West Yorkshire to the south of the County. The two types of limestone provide a feedstock to different end users so the use of Magnesium limestone conserves the carboniferous limestone for use in the concrete and coated roadstone markets.

3.5.3 The County Council are reviewing policies in their minerals and waste plan to provide an overview of the types of stone available and the use of secondary aggregates, thereby providing accurate data on land banks for each type of stone. The building stone market is also addressed separately so a quarry that provides building stone may require a land bank of 25 years or so to maintain a supply and support the investment of sawing and marketing the stone to the housing and commercial building sectors.

3.5.4 It is felt that the proposed development of Area 8 at the site is in accordance with the National Planning Policy Framework and the quarry has been included in the Preferred Sites for Mineral Extraction in the Minerals and Waste Development

Plan consultation published in November 2015 and under review by the Planning Inspectorate with a further consultation in the spring of 2019.

3.6 Local (County) Policies

3.6.1 In the case of building stone the research that culminated in the publication of Planning of the Provision of Building Stone (ISBN 185112 691 0) and the policy in the NPPF recognised that small building stone quarries can provide stone for repair but are unlikely to be able to provide stone for new development and consequently there would be a loss of character in the areas where the local stone was used. The area alongside the exposure of Magnesium limestone has used this type of stone all along the villages and towns near to the exposed area. North Stainley and Ripon, Tadcaster, Church Fenton, Boston Spa, Darrington and Kirk Smeaton have all been developed using Magnesium limestone. The quarry will provide hewn block to third parties and also saw their own stone in the saw shed on site. Building stone quarries are supported in the County Policies and in the NPPF in bullet point g of paragraph 205.

3.6.2 The County Council are reviewing the Minerals and Waste Plan and requested sites for allocation of minerals and the area 6 and east area 7 were included as allocations for limestone extraction as part of the field system alongside Brockadale Plantation to be safeguarded as a mineral site. Area 8 has been included in the safeguarded areas and the quarry is included in preferred option document for magnesium limestone reserves.

3.6.3 The Environmental Impact Assessment undertaken for the proposed development to extend the quarry into Area 8 has shown that the potential disturbance and environmental impact of the proposed operations which are assessed as minor are in fact outweighed by the benefits of further extraction, the maintenance of employment, the programmed redevelopment of the industrial estate within its footprint and the use of the existing quarry as a waste management site. There will be little or no impact on the Brockadale SSSI and in fact the quarry can provide additional habitat that compliments the habitat through restoration of the site to provide low level limestone grassland with tree planting and hedges on the boundary of the site.

3.6.4 The North Yorkshire Mineral Policies have been considered as part of the Environmental Statement to test the proposal against policy.

3.6.5 Policy 3/1 Land banks

"*The MPA will endeavour to provide and maintain throughout and at the end of the plan period a stock of permitted reserves (land banks) equivalent to at least 7 years for sand and gravel and 10 years for crushed rock".*

The MPA have recognised in their work on the Minerals and Waste Plan that the types of crushed rock may have to be divided into their geological origin so that there are separate land banks for Carboniferous and Magnesium Limestone within the County. There are insufficient reserves of Magnesium Limestone permitted at the present time to meet the demand to 2030 discussed in paragraph 5.44 in the Issue and Options Document published in February 2014 where there were a number of solutions discussed. In ID02 options were provided for the supply of crushed rock from new sources of supply would be near to the A1 to provide flexibility of supply. The term "new sources" means green field or extension to existing quarries. In ID 07 it was recognised there was a theoretical shortfall of 8 million tonnes of Magnesium Limestone. If this is taken over the last 10 year period of sales where 6 of those years have been through the worst recession in the construction industry since records began then the shortfall would need to be increased by 40% to 11 million tonnes. A separate land bank for Magnesium Limestone would be a preferred option from the applicant's point of view in that the A1 is near to the overall exposed reserve, the product supplies a different market, the carboniferous limestone can provide concreting aggregate and cement feedstock and most carboniferous limestone quarries are located in the north and west around Skipton away from the main route through the County, the A1 where minerals could travel further from strategically placed quarries in the exposed Permian strata belt.

3.6.6 Policy 3/2 – The company has promoted the quarry site and land around as a preferred area for Magnesium Limestone extraction and it has been accepted in the preferred allocations plan for the County. The fields north of Went Edge Road have been submitted as safeguarded areas for magnesium limestone.

3.6.7 Policy 3/3 – The quarry is located in an area of Permian Magnesium limestone that has been worked since 1852 as an old quarry and is shown on the first edition OS map located in the field where the south bound slip road comes off the A1. At present within the estate land holding and area 6 there are 15 months of reserves and the area 8 field will provide reserves for 7 to 8 years.

(i) The application is for a longer term reserve to allow investment and is a moderate extension to the quarry of 9.7 hectares with 8.6 hectares of mineral working and is within an area that is safeguarded in the minerals and waste plan for the County. It will supplement reserves that are granted planning permission over 20 hectares.

(ii) The scheme will provide an overall restoration of the site in the north and eastern part over the existing quarry that will provide 25 hectares of habitat at 1 hectare per annum additional to the area of the Brockadale SSSI and woodland planting on the periphery of the quarry. Within the

period of working 20 hectares of land will be restored out of the total area of 30 hectares and 3 hectares will be restored to the surface in area 6 as working is completed in area 8. Area 7 adjacent to the application area will be restored once quarrying has ceased in that area as waste will be tipped against the face on the south and north side and tie into the north side face in the existing quarry adjacent to Brockadale Plantation. Refer to the working plans in appendix 2.

(iii) The proposal will prevent the sterilisation of reserves of magnesium limestone which the County Council recognise is in short supply and will provide a better restoration scheme for the existing quarry now the final design of the relocation of the industrial estate is completed and the site has been removed from the surface. The minerals are processed in the base of the quarry and transported from the site via the A1. The whole operation is screened from the surrounding area and the minerals are taken to market via the A1 and there is no transport of mineral through the surrounding villages so the impact from transport is minimal to the residents of the area.

3.6.8 The proposed long term development of the site, which this application is the third part of, provides the County Council together with Selby Council and the applicant the information to assess the overall proposal of a systematic mineral extraction scheme, recovery of waste for restoration and the new buildings for the industrial estate to enable its redevelopment for a beneficial use complies with the policies of the County Council, Selby Council and the NPPF.

3.6.9 Policy 3/4 Other Areas

"Outside areas of search and preferred areas for mineral working planning permission would only be granted for borrow pits and small scale extensions to existing sites.

The quarry is within an area of search and preferred areas that is being promoted through the Minerals and Waste Local Plan and it is a medium sized extension to the quarry area being 45 % of the existing area. Restoration of the south side and then the base of the quarry in area 3, 4, 5, 6 & 7 will reduce the operational area as area 8 is worked to 15 hectares.

3.6.10 Policy 3/8- Secondary and Recycled Aggregate.

3.6.11 The site will be reusing mineral waste for sand washing to provide limestone grit sand from what was previously agricultural lime and waste.

The material is high grade grit sand for concrete products and the remainder is the fine fraction which is clay and can be used as soil making material. The quarry also produces a small amount of residues inert fines from the processing of CDEW material and as this operation increases in output then the excavation material and screened rubble will provide fines for restoration. There is unlikely to be an increase in vehicles over and above the present situation as the CDEW is delivered on return loads.

3.6.12 Policy 4/1 – Determination of Planning Applications

- The mineral deposit has been fully investigated in the field between the existing quarry in Area 7 and the field to the east and there is 4,900,000 tonnes in the site area. There are 150,000 tonnes remaining in area 6 and 35,000 tonnes remaining in area 7.

- The proposal to work area 8 is acceptable based on the planning application documents and the impacts assessed in this Environmental Statement.

- The proposal has been designed based on the technical reports to mitigate any impact from mineral extraction and the associated activities in the base of the quarry. The restoration scheme has been prepared so it is beneficial to the area and the SSSI in providing habitat which replaces agricultural land.

- The Landscape Architect, Mining Engineer and Ecologist have worked together to landscape and screen the site considering the soil resources taken from the agricultural land classification report (ALC). There is an agreed planting scheme for the boundaries of the site to enhance the landscape and reduce the visual impact. Discussions have taken place with the MPA, the County Ecologist, the County Landscape Officer and the Planning Officer to design extensions to the quarry as part of the overall restoration concept for the completed site.

- The impacts have been found to be minor at the quarry when considered against the existing situation which is a quarry working that is over 35 years old and has been in the landscape within living memory. The proposal, which is the third part of a 15 year term programme to relocate the industrial buildings and landscape the site whilst ensuring the reserves of limestone are not sterilised will have an overall benefit for the SSSI, Sayles Plantation and the

surrounding area in that it will be woodland and calcareous grassland in an area of intensive arable farming practices.

- High standards of restoration will be achieved with low level mosaics of habitat against the remnant quarry faces not too dissimilar to the escarpment and the river valley.
- There is a high standard of aftercare and management as the applicant has signed a section 106 agreement on planting and maintenance which includes areas in alongside the B6474 Went Edge Road.
- The transport link is on the B6474 for 1 kilometre westward from the access to the site to the A1. The applicant has agreed to provide a contribution to the repair of the road from the entrance to the site up to the A1 and the junction for the north bound slip road so the proposal is acceptable
- The cumulative impact has been found to be minor when other quarries are considered and the locations to the main arterial road network. The other impacts from the site are also minor and do not affect the safety or capacity of the road network, are not affecting the amenity of the area and most importantly are not affecting the SSSI and the habitat on the boundary of the site.

3.6.13 Policy 4/2 Environmental Considerations

The proposal meets the objectives of the policy in that the extension into area 8 to extract minerals and restore the whole site, redevelop the footprint area to accommodate the industrial estate and operate the waste management operation have limited the adverse effects of the site on the local environment.

3.6.14 Policy 4/5 Other Areas of Landscape Quality

The applicant, the engineer and the Landscape Architect have worked together to design the proposal for the extension in to area 8 based on the work undertaken for areas 3, 4, 5, 6 & 7 over the past 8 years and the long term plan for the extraction of all the limestone in the fields adjacent to the existing workings to minimise and improve visual amenity of the area by removing the industrial estate from the skyline. They have worked with the Planning Department of North Yorkshire County Council to protect the landscape with a screening and earth works proposal that will protect the character of the

Permian Limestone ridge. The restoration proposal for tree planting and unimproved grassland will enhance the landscape and reintroduce some woodland and habitat adjacent to Brockadale Plantation.

3.6.15 Policy 4/6 Nature Conservation and Habitat Protection.

The site is adjacent to a site of Nature Conservation and Habitat Protection with National and International Species which have been recorded in detail by the Yorkshire Wildlife Trust (YWT) and other Natural History Groups over the past 30 years. After rigorous examination there is no evidence the existing operation or any future proposals would affect the SSSI and indeed is likely to benefit the area as it is being restored to a similar habitat.

3.6.16 Policy 4/6A Local Nature Conservation-

There is a local YWT Nature Reserve within the SSSI and it is monitored regularly. The site is not suffering from any signs of impact from the quarry and has been noted as “favourable with no loss of extent” in May 2009 as part of the condition report of the woodland, crag and pasture. Further discussion has taken place with YWT and the MPA to reflect the restoration of the site to enhanced or at least complement the Brockadale Plantation by extending the wildlife corridor and varied habitat. Discussions will be ongoing with YWT on the management of the site once it is restored and the peripheral areas around the quarry.

3.6.17 Policy 4/7 and 4/8 Archaeology Assessment

An archaeological desk top study has been undertaken on Area 8 and a field assessment will be undertaken on the field in advance of any working in April 2019. The mapping in area 7 found field enclosures which concur with the desk top study where the early Ordnance Survey maps of 1852 and 1892 were looked at and the ALC report on the quality of the land. Trial trenches have been excavated in area 7 and a report submitted to the Heritage Section of the Council. Proposals have been submitted with the Archaeological Desk Top Report prepared for area 8 which recommends a geophysical survey of the field to map any areas where there may be field enclosures or habitation related to the early farming. The proposal will not have an impact on the archaeological interest and the trial trenching on the field that is area 7 has provided the means to record the data of the field

enclosures and previous farming activity. It is not thought that there will be any artefacts when there is soil stripping but there will be a watching brief as soil stripping takes place in phases 8 A to 8C.

3.6.18 Policy 4/9 Other Heritage Features

On the older OS maps there is shown a fort or Iron Age earthwork. The location of this fort was on the crest of Brockadale Plantation and it is within the area that was granted rights to tip waste in the IDO 237 permission dated 21st August 1947. It would seem this earthwork was destroyed many years ago when rubble was tipped in the quarry known as area 1.

3.6.19 Policy 4/10 Water Protection

The groundwater and the surface water environment have been investigated and the River Went is classed as Grade B for chemical and biological conditions. It has improved from grade D in 2000 so the conclusion can be drawn that the quarry is not affecting the River. The site was investigated in 2006 to assess the permeability of the strata and 3 metres of red marl were found over mudstone below a level of 20 metres aod. The groundwater table is in the Ackworth Rock beneath the site at 14 metres aod which is recharged where it outcrops in the lower lying land to the west around Wentbridge. There is no evidence the quarry site is impacting on the water resources in the area and there are no supplies within 1 km of the site.

3.6.20 Policy 4/13 Transport

The transport statement by NTP for areas 5, 6 and 7 dated June 2016 in appendix 4 has concluded that the traffic movements from the existing quarry can easily be accommodated on Went Edge Road to the A1 from the upgraded quarry access. There are no visibility, safety or capacity issues for the road network in 2016 or 2026. The output for the quarry will be the same so the report is relevant but the highways planning consultant has been asked to advise the applicant and provide an updated report to the County Council after discussing the scheme with the Highways Department. NTP have reviewed the site in May 2018 for the traffic speed assessment for the second access to the site granted planning permission in November 2018. Negotiations are currently being undertaken between the applicant's road design consultant and the Council's Highways Section on the contribution for the repairs to the

edges of Went Edge Road. The roadside verges will have to be cut with channels and drains to allow water to flow away from the road edge as the new sections of tarmac will be damaged.

3.6.21 Policy 4/14 Local Environment & Amenity

There have been surveys for noise and vibration for quarry plant and blasting of rock. The reports reveal that the site is working within the limits set in the planning conditions. The blasts from the eastern area have been measured at 4 ppv at the western boundary so there is no impact on the amenity. Noise surveys have found that at the boundary of the site the noise levels at the nearest residential properties meet the guidance in the technical document for the NPPF 2018 and are below the limits set in the planning permissions. Dust emissions have been assessed to the nearest receptor which is the SSSI and it has been found that the protection measures to suppress dust are working as the flora is thriving around the site.

3.6.22 Policy 4/15 Public Rights of Way

Public rights of way are located in Sayles Wood and Brockadale Plantation from Kirk Smeaton Church to the Wentbridge and the route is not affected by the quarry. The extension in area 8 is 150 metres to the south. The B6474 is lightly used by pedestrians as there are no footpaths and walkers have to walk on the grass verge.

3.6.23 Policy 4/16 Ancillary and Secondary Operations

Planning permission exists for a waste recycling area in the base of the quarry and in the industrial estate, reference number Selby 2010/0174/FUL, 8/45/13Z/P granted on 25th June 2010. The use of inert fines material in the restoration concept has been considered as beneficial to the final land form and there is no risk to the environment from the processing of secondary aggregate now taking place on site or the deposit of the fines material in the future of inert material if used as an engineered fill for the limestone fines to be spread over as soil.

3.6.24 Policy 4/17- Importation of Waste

There is an environmental permit for a waste recycling centre and the excavation waste and fines can be used to a beneficial restoration scheme replacing limestone fines that are now used to provide grit sand for the construction sector. The material is inert and is brought on to the site by trucks that take limestone away. The operation would not have an impact on the road network to the A1 and as it is inert and regulated by the Environmental Permit the emissions are controlled to the environment.

3.6.25 Policy 4/18 Restoration to Agriculture

The Area 8 site and the existing quarry are not going to be restored to agriculture except for area 6 but there is scope for the area adjacent and within 150 metres to Went Edge Road to be restored to agriculture by infilling. This would depend on the amount of material available in the area and within 25 miles of the site to enable 35 metres to be filled in to the surface and be 400 metres long and 150 metres wide. The void would be 4 million tonnes and would take until 2044 to complete. Area 6 is to be filled to the surface from the imported engineering fill and the limestone fines to recreate the arable field. The soil resources will not be cross contaminated so that the grade of land can be reinstated as surveyed in the ALC report in section 10 of this statement.

3.6.26 Policy 4/19 Progressive Restoration

There will be progressive restoration along the southern, western faces and north east faces whilst quarrying takes place in Area 8 with tipping against the southern face in area 3, 4 & 5 first and following the advance of the face in area 6 and the IDO area. The restoration will create additional habitat in these areas to compliment the SSSI and woodland and will gradually reduce the operational area of the quarry.

3.6.27 Policy 4/20 – Aftercare

The site has an aftercare agreement for the Area 3, 4, 5, 6 and 7 with the planning permissions NY/2010/0158/FUL, NY/2014/0113/ENV and NY/2016/0185/ENV. A concept for the whole site has been discussed with the MPA and the Landscape Architect and it encompasses the permitted areas. The same specification has been used for the extension of the quarry to the east and the Landscape Architect is preparing a restoration aftercare and management plan for area 8.The restoration with in

the quarry will be subject to the normal aftercare conditions but the concept is for low maintenance grassland and woodland planting. The restoration concept has been extended to include area 8 from area 7 with a low level restoration scheme for the quarry and an arable field for area 6.

3.6.28 Recycled Construction Waste

The waste plan for England 2013 estimated there was 74 million tonnes of waste and a high percentage can be recycled. The excavation waste can be recovered to provide earthwork material for the restoration of the site and then the limestone fines which are indigenous to site can be used of soil making material. This is not a low grade use as the inert waste is being used for beneficial after use to restore to habitat or agriculture. The inert waste delivered to site will be used for a sustainable beneficial use to enhance the area and the nearby SSSI.

3.6.29 Building Stone

The site has a fully equipped building stone processing area with a circular and band saw, cropper and dressing area. The stone is removed from the pile of material and each block selected for the saws. The product is traditional walling and monumental stone. The MPA are supportive of proposals to use building stone. The company are using a sustainable resource as they are picking out quality block for use before the rest is processed to aggregate. The off cuts are also processed for aggregate without leaving site.

3.6.30 Agricultural Lime

There will be a market for Agricultural Lime and in the area it is mostly used on the exposed Coal Measure land to the west of the quarry in West and South Yorkshire to counteract the inherent acidity of the land from coal fragments and organic material.

3.7 Conclusions of Planning Policy

3.7.1 The basic approach of policy towards development proposals is that all impacts and benefits are considered in detail plus any material consideration for habitats and protection of the environment is taken into account to reach a balanced decision. The saved policies of the Minerals and Waste Local Plan have been considered against the proposal to work limestone in area 8 together with the applicant's

consultation on Issues and Options for the Minerals and Waste Plan.

3.7.2 The proposal for the extension of the quarry is in accordance with all policies as it does not increase the effect on the local environment when considered against the existing base line, the amenity, the capacity of the road network, the visibility of the site. The restoration proposal will be beneficial to the SSSI and the landscape in that it will be lower level and area 6 will be worked and filled in.

3.7.3 The application is an extension to an existing quarry to secure further reserves of limestone to work on the north side of Went Edge Road. The applicant has discussed the proposals with the Parish Council's in the area to minimise the effect of the quarry on the villages in the area and enhance the amenity of the villages by providing machinery and stone for improvement work. The applicant has discussed the continued working of the quarry and the final restoration of the site with the industrial estate remaining in the floor of the site once completed with the community's representatives at 2 liaison meetings in September and December 2018.

4.0 Socio Economic Issues

4.1 Introduction

4.1.1 This chapter considers the likely socio-economic effects of the proposed development. This section considers firstly the issue of demographics and the impact on the local economy and, finally, other socio-economic benefits resulting from the proposed development.

4.1.2 The extension of the quarry into area 8 from area 7 will maintain the employment of some 30 people and it is likely that due to the investment in plant and machinery that there will be more employees at the quarry and waste transfer recycling plant. The quarry provides secure jobs that are well paid and the workforce is all local with the majority living in the Pontefract and Kirk Smeaton area. The jobs are for people of all ages with work available for young people in the area who prefer to train on the job and learn skills in the extractive and waste management industries.

4.1.3 The company have invested over £4 million pounds in the quarry on new equipment for the processing of the limestone to provide high grade products and reduce waste from the mineral processing operation. The dust and fines material is now washed in the new sand plant to provide a limestone grit and sand to be used as filler in concrete block manufacture and structural concrete. The material is substituting furnace bottom coal ash that was available from the coal fired power stations which can then be used in high specification concrete mixes. Sand is also used for filtering water and horticultural use so the limestone sand reduces the use of river sand for concrete so it is available for filter media and higher end concrete specification. Due to the thickness of the bed of limestone the area of land disturbed to produce aggregate and the sand size fraction is considerably less than a sand and gravel quarry. It is estimated that the limestone sand from the quarry when washed as product would be the equivalent of 6 metre bed of sand and gravel. As most sand and gravel quarries work deposits of less than 6 metres thick then the equivalent area disturbed is less. The introduction of a sand washing plant has provided a substitute for river sand and therefore what was considered to be a waste or bulk fill has now replaced sand which can be used in higher specification products. This is a sustainable use of resources and there is less carbon footprint as the sand and gravel

quarries are located in the Ure Valley in North Yorkshire, the River Aire at Methley and on the Trent in Nottinghamshire. Whilst there are sand quarries east of Doncaster and around Malton these provide mortar sand, building sand and silica sand. The cement block plants were built around the coal fired power stations at Selby and Great Heck but the power stations have been phased out and substitute fuels will not provide furnace bottom ash for cement block manufacture.

4.1.4 The proposal allows the continued extraction of stone in an area which will not disturb the continued use of the industrial estate that provides premises for three businesses that employ up to 50 people. The workforce at the industrial estate is employed in providing plant and equipment, mortar and sawn stone products. The salaries are high when compared with the tourism and agricultural sectors.

4.1.5 The current owner of the estate Meakin Properties who also own the existing quarry are trying to programme a managed design of the quarry workings that will provide ongoing mineral working now that the relocation of the industrial estate in the same footprint in the floor of the quarry has been completed. That process has taken two years to finalise and implement. The removal of stone from Area 7 and now area 6 is the second phase of the redevelopment of the site after relocation of the industrial estate from the surface and incorporate the recycling centre and quarry in the same area without conflict.

4.1.6 The industrial estate site has been remediated and a brown field site removed from the land at the surface with relocation into a modern facility providing employment through the subsidy of mineral extraction and waste management.

4.1.7 Planting around the site will screen the quarry and other operations from the larger area, provide additional habitat in the area and enhance the walks in the area around Brockadale Plantation.

4.1.8 The site will provide employment and new energy efficient buildings with good transport links to the local urban areas of West, South and North Yorkshire via the A1.

4.1.9 The villages of Kirk Smeaton and Wentbridge are not affected by the quarry or the vehicles as quarry traffic do not travel through those villages. Whilst the villages are connected to each other and the A1, the road is lightly trafficked according to the Transport Assessment and the quarry company have been willing to make a contribution to the repair of the road based on a quotation they have obtained to repair the road to Highways Department Standards.

4.1.10 The applicant has met with the Local Parish council at Kirk Smeaton on a number of occasions since March 2014 and explained the proposal to work area 7 and 8

and the longer term plan for the quarry to work those extensions after relocation of the industrial estate and restore the site on the quarrying area. A meeting was held on the 23rd January 2014 to discuss the application for areas within the quarry, the additional areas which is now areas 5, 6 and 7 and explain the work on the surface for the soil storage and tree planting under the current planning permissions. Further meetings have been undertaken with representatives of the Parish Council's in September and December 2018 and the applicant has kept the Chairpersons and Clerks fully informed of the proposals. There appears to be no objection to the expansion of the quarry to expose more reserves.

4.1.11 There was an issue with the state of the road and the speed of vehicles on the B6474 but the road has been resurfaced and the verges are being treated and barriers places on the side to prevent drivers pulling off to the side. Further work is to be undertaken on the highway from the site access to the A1 once the contribution has been agreed with the Highways Department.

4.1.12 The applicant has a policy at the quarry for drivers to respect other road users and sheet up their wagons. The drivers of HGV tipper trucks are on a system of three strikes and you are out. If there are persistent breaches of the transport policy to other road users in the area of the quarry then the driver will be barred from the quarry after 3 reported instances or identified on the camera at the weighbridge office. The quarry operator and the owner are doing all they can to maintain the road dust or mud free and keep the trucks off the verges and have purchased a new road sweeper.

4.1.13 Further discussions can take place either through the liaison committee consisting of the councillors, the owner and an officer from NYCC to discuss the effects of the quarry or on an informal basis as the Parish Clerk can contact the owner / applicant.

4.1.14 The director of the business is in regular contact with the chair of Kirk Smeaton Parish Council in regard to the operation of the quarry, the work that is to take place at the surface, the industrial estate and the maintenance of the B6474 including sweeping and forthcoming repairs to be undertaken by NYCC on the drainage and road edge.

5.0 TRANSPORT

5.1 INTRODUCTION

5.1.1 Meakin Properties appointed Northern Transport Planning Ltd to provide an assessment of highway and transport matters considering the mineral extraction in areas 5,6 and 7, the future working of the quarry and the current operations including the industrial estate, the business premises in the estate, the waste recycling centre and the building stone saw shed. The report that is dated July 2016 will be reviewed by NTP and updated for area 8 for the applicant. The traffic data and counts have been reviewed and further work undertaken from the report dated June 2016. The area 5, 6 and 7 report dated July 2016 and the traffic speed survey report for the new access into the site completed in May 2018 was reviewed quite recently by the Highways Section of the County Council including the junction modelling and the applicant believes that the new surveys and junction modelling using PICADY illustrate that the road network is safe with the current traffic flow on the B6474 and from the quarry. The volume of stone worked has increased due to the upturn in the construction sector and on the days of the traffic surveys the trips away from the quarry equalled output of 4,000 tonnes per day. The company were providing stone and bulk fill for capping on a campaign basis at the time. The conclusion of the report for Area 5, 6 & 7 and this application are still applicable to work the field to the east and bring stone through the quarry to the access road. The junctions at the A1 and on the B6474 are below capacity and apart from the hours between 07:00 and 09:00 the road is lightly used.

5.1.2 The proposal is to extend the quarry into area 8 from area 7 and maintain production at the site based on the previous sales pre-recession and the output based on the growth predicted by the Government in the housing and infrastructure sectors. The sales have been estimated at 2500 tonnes per day on average with a maximum of 4,000 tonnes per day of sales of aggregate from the whole quarry. The other vehicle movements from the industrial estate have been measured and considered as part of the traffic assessment although they do not form part of the planning application. The traffic movements associated with the site have been granted in previous planning permissions for the quarry / industrial estate and up to 200 vehicles have been associated with leaving the site when it was a container base and ELV centre. These activities have reduced over the past 9 years as the site has been used for quarrying and plant hire but the vehicle movements have remained the same. The application to extend the quarry will not increase the traffic movements as the output will remain the same despite the new plant and equipment. The traffic report concludes that Went

Edge Road is lightly used and the continued use of the road for quarry vehicles will not increase the impact of the road and the safety.

5.1.3 The transport assessment considers the quarry extension into field to the east in detail in appendix 4;

- the local highway network and its road traffic accident record
- the previous and current operations of the site in relation to Planning policies and the NPPF in section 2.
- The current use and continued mineral extraction in section 3
- the proposed operation of the site and existing traffic flows, junctions and operational assessment
- the accessibility of the site in relation to sustainable transport and means to encourage its use
- the impact of the continued development on the local highway network particularly in relation to the surrounding junctions when compared with the current use and previous operations on the site.

5.1.4 For the purposes of the previous planning permissions, the areas 5, 6 & 7 planning permission granted in September 2018 and the future use of the site the surrounding area has been visited, traffic count measurements have been taken together with general observations of existing traffic movements to assess the current situation in relation to traffic flows along Went Edge Road from the surrounding villages and the activities at the quarry site. The traffic report was completely reviewed for the site in June 2016 and the modelling for the junctions and traffic flow updated. The non-quarry traffic is presumed to be the same as the previous report for Area 5, 6 and 7 on Went Edge Road as the area is rural and there has been no major housing development in the area that could add traffic. The traffic speed survey undertaken in May 2018 provides details of vehicle movements.

5.1.5 Based on the measurements taken, the NPPF guidance on traffic matters, the guidance for the Environmental Assessment of Road Traffic where an increase of 30% in vehicle movements per hour could have a material impact on the road users, the Transport Assessment Guidance considers an increase of 30 vehicle movements per hour and the consultant's own assessment, the statement of transport matters concludes that there are no highway or transportation reasons why the application should not be approved and requests that the LPA confirms these findings.

5.1.6 North Yorkshire County Council and Selby Council were consulted to obtain advice about the scope of the transport matters to be assessed for area 5,6 and 7 through the request for a scoping opinion for the Environmental Statement. A meeting was held with the Parish Council where the Highways Officer from NYCC was in attendance for the contribution to the road improvements in September 2018. There are no material changes to the traffic generation from the quarry in working area 5, 6 & 7 other than an additional time of 8 years for the area 8 extension and the importation of materials to recycle and recover for restoration a further 6 years. The quarry has permission to work until February 21st 2042 anyway so the area 8 quarry extension will be worked within that period and area 5 and 6 will be restored and completed by 2030.

5.1.7 NTP (Consulting Engineers) Limited is a specialist firm of Highways, Traffic and Transportation Consulting Engineers. Over the past 10 years they have undertaken over 2,000 schemes for clients in both the Private and Public Sector. NTP comprise of high quality team of Chartered and Incorporated Engineers and technical staff specialising in development related highway investigations. The staff who worked on the project are Andrew Kirby (Team Leader), John Vernon and members of staff who undertook the traffic counts and speed surveys.

5.2 ASSESSMENT APPROACH

Methodology

5.2.1. This assessment of transport matters has been produced in accordance with the Department for Transport's 'Guidance on Transport Assessments' March 2007). The guidance introduces the subject matter and provides detailed chapters on producing a Transport Assessment. Details concerning methodologies and latest guidance are also presented in the document.

5.2.2 Further information has been taken from 'Guidelines for the Preparation of Transport Assessments and Travel Plans' to ensure that the Assessment meets with local guidance. There are no plans for the workforce to travel by public transport as the quarry begins work before the bus service can get them to work. The company promote car sharing where applicable when employees are living near each other or are on the route to work.

5.2.3 In addition to the foregoing documents the following guidance has also been taken into account in this assessment:

- Institute of Environmental Assessment (1993). Guidance Notes No 1 *'Guidelines for the Environmental Assessment of Road Traffic" Horncastle: IEA;*

- Department for Communities and Local Government (2007) Guidance on Transport Assessment

5.2.4 The methodology used in the Traffic Statement and assessment accords to that set out in the above IEA guidance document, which is hereafter referred to in this chapter as the IEMA guidelines. The methodology used in this assessment focuses on:

- Potential impacts on local roads and the users of those roads; and
- Potential impacts on land uses and environmental resources fronting those roads, including the relevant occupiers and users.

5.2.5 As part of the assessment the following information was obtained:

- Accident Data: Obtained from the Local Authority for an area with in close proximity to the site over the last 6 years and discussed in section 3.4.
- Existing traffic flows: Carried out by NTP Traffic Enumerators in June 2016 and reproduced in the table in 3.1 on page 7 of the Traffic Statement.
- Operational assessment on the junction and the using the Transport Research Laboratory programme PICADY to analyse the traffic flows from the site during the morning and evening peak.
- The existing access visibility was measured to the east and west.
- Dimensions were taken of the local highway, cycle ways and footways and it is noted there are no cycle or footways on the road.
- Photographs were taken to provide evidence of general observation of the existing site and surrounding area which are included in the photographs of the quarry in appendix 3 of the Environmental Statement.
- Committed development traffic flows at the site access were abstracted from the past records of quarry sales and the associated uses with the industrial estate.
- Topographic survey of the site and access.

- Interrogation of the data to obtain multimodal and vehicular trip data for each of intended use class and provide an indication of likely traffic generation and multimodal split for each use on Went Edge Road. The data is based on surveys carried out by NTP consultants on behalf of the applicant.

- Utilisation of the PICADY computer programme to model the site access junction in terms of current traffic use and future growth in traffic to 2024 as the extension of the quarry could provide reserves over that period when considered with the existing quarry.

- The traffic for the site mineral extraction was estimated from the expected staff and resources needed to carry out this work and the quantity of limestone to be extracted in Area 4 as opposed to other parts of the quarry where the industrial estate would have to be reduced in size to access currently permitted limestone reserves as described by in the planning application statement.

5.2.6 North Yorkshire County Council and Selby Council have been consulted about the scope of the Transport Assessment in the Request for a Scoping Opinion dated January 2016 and at the Parish Council meetings that the applicant has attended.

Assessment Criteria

5.2.7 The following rules, taken from IEMA guidelines, have been used as a screening process to define the scale and extent of this assessment.

- Rule 1 include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGV's are predicted to increase by more than 30%); and

- Rule 2 include any other specifically 'sensitive' areas where traffic flows are predicted to increase by 10% or more.

5.2.8 From the IEMA guidelines it should be noted that projected changes in traffic of less than 10% are generally considered to create no discernable environmental impact, given that daily variations in background traffic flow may fluctuate by this amount.

5.2.9 The IEMA guidelines identify groups, locations and areas which may be sensitive to changes in traffic conditions and which should be considered

for assessment. These potentially affected parties are summarised in the table below.

Table 5.1 Sensitive groups, locations and areas	
People at home	Pedestrians
People in work places	Cyclists
Children	Open Space
Elderly	Recreational Sites
Disabled	Shopping areas
Hospitals	Sites of ecological/nature conservation value
Churches	Sites of visitor/tourist attraction
Schools	Accident hotspots
Historical buildings	

5.2.10 As the traffic flows are predicted to be the same as the current operations albeit subject to fluctuation in the market depending on the economy and the construction sector there is not going to be an increase by 15% or more, so those relevant sensitive groups, locations and areas, as summarised in Table 5.1 above will not be assessed. The IEMA guidelines also state that other groups, locations and areas could be added if the assessor considers it appropriate, such as areas where there is sizeable pedestrian activity but poor pedestrian facilities. As the area is agricultural then the use of Went Edge Road by pedestrians is low and other uses listed above are not on the route from the quarry to the A 1.

5.2.11 In addition to those criteria from the IEMA guidelines the Council has also requested information considering the in two-way traffic flow on the adjacent highway network from the quarry to the A1 in the scoping assessment for area 4 and discussions with the Highways Department at a meeting with the Parish Council. A threshold value of 30 vehicles or more has been given. This also reflects threshold values suggested in the document “Guidance on Transport Assessment. The information has been updated for the traffic assessment for June 2016.

Scoping and Consultation Response

5.2.12 North Yorkshire County Council and Selby Council have been consulted about the scope of the assessment for Area 6 and 7 and the applicant believes that the scoping assessment and the formal responses to the request on the 21st March 2016 are still applicable to this proposal as the area 5, 6 and 7 are similar by comparison to the Area 8 extension and the existing quarry. The advice from North Yorkshire County Council was that they required information on the likely traffic movement associated with the development and any increase in traffic. There will be no increase in traffic over and above that to meet an improvement in the economy since September 2008 when the construction sector began to decline until January 2014.There has been a marked upturn to levels seen prior to September 2008 as the housing market recovers and brownfield land is being developed. Traffic movements have been measured and modelling of the junctions completed based on the 2016 surveys which represents the current economic climate for the construction sector so the quarry is running at full capacity at the present time to meet demand through the summer months.

Policy Framework

5.2.13 There are numerous planning policy documents which need to be given due consideration when assessing the potential impact of the development proposals. These range from County saved planning policies and the National Planning Policy Framework revised in July 2018.

5.2.14 At more local level the County Council has developed its own policies for the Minerals and Waste Plan and traffic associated with all forms of development. In particular policies 4/12 and 4/13 which are discussed in this section and in paragraph 3.19.

5.2.15 The most important policy issue for consideration in connection with the proposed redevelopment of this site is that of sustainability. The appropriate policies are covered in detail below:-

National Policies

5.2.16 National Planning Policy Framework – Paragraph 111 states “that development that generate a significant amount of movements should be supported by a Traffic Statement. The paragraph goes on to note the need for a safe and suitable access for the site.

5.2.17 Access to the site has been upgraded as part of the investment programmes for the quarry and the access has been widened and covered with tarmac from the junction with Went Edge road to the access into the quarry be the offices and weighbridge.

5.2.18 The traffic statement has been produced in accordance with the polices in the NPPF and in cognisance of the policies of NYCC. There is no major increase in traffic from the quarry due to the proposal to extend the workings into Area 5, 6 & 7 and the current traffic flows have been assessed for the additional period of time the quarry will be working this limestone, to provide the information to the Council's highway officer so the effect of the existing quarry on traffic capacity can be ascertained. The operation will not affect the safety of the highway network or the B6474 and the trucks leaving site can access the major road network on the A1 so there is no need to travel through villages on the A or B class roads in the area.

5.2.19 The Parish Council at Kirk Smeaton expressed their concern during the determination period for the Area 4 application that the road network along Went Edge road was inadequate due to the condition of the verges and also the width of the road. This has not been upheld in the Traffic Statement as the road is deemed suitable for quarry traffic and associated traffic from the industrial estate to the A1. The Highways Department at NYCC also disagreed with the Parish Council but have requested some works be funded by the applicant which WVAR have agreed to by providing a sum of money to improve the signage and repair the sides of the road where it is breaking up. The road will be resurfaced and it is understood that the junction with the northbound slip road with Wakefield Metropolitan District Council's jurisdiction is to be realigned so the junction is not at an acute angle off Went Edge Road.

Local Policies

5.2.20 Policy 4/13 Traffic Impact

Where rail, waterway or other environmentally preferable modes of transport are not feasible, mining operations other than for coal, oil and gas will only be permitted where the level of vehicle movements likely to be generated can be satisfactorily accommodated by the local highway network and would not cause undue disturbance to local communities.

- *The increase in size of the quarry extraction area by 4.3 hectares in area 5, 1.8 hectares in area 6 and 1.9 hectares in area 7 would not lead*

to an increase in the volume of traffic entering or leaving Went Edge Quarry as it not increasing production beyond what the plant can process the application is for more reserves to allow more investment and write off for that investment over a period of 10 years. The extension is for the purpose of extending the life of the quarry by working reserves readily available and leaving permitted reserves under the industrial buildings until they can be relocated and those reserves released before 2042. The quarry's close proximity to the A1 Trunk road satisfies the above policy that this major traffic artery can satisfactorily accommodate the traffic visiting the quarry and delivering product. It follows that if there is to be no increase in output from the quarry whilst working area 8 then the proposal is in accordance with policy 4/13.

5.2.21 The traffic statement prepared by NTP for this proposal and the previous one produced for Area 5, 6 and 7 illustrates that the road network will not be affected as they not only considered area 5 but the future of the quarry working in area 6 & 7 and future working in areas to the east and west all based on an output of up to 4,000 tonnes per day and the conclusions are still relevant for this proposal to extend the quarry into Area 8 in the new planning application. The capacity of the B6474 road to the A 1 is not affected by the trips to and from the quarry and industrial estate. The B6474 road network is over the 700 metres from the quarry to go south and 1 kilometre to access the A1 to go north. It is lightly used and there are no capacity issues with the current levels of vehicle trips associated with the quarry and the estate. Ultimately the applicant is not seeking to increase production at the site other than what was common before the recession only to extend the quarry to access more reserves and maintain the period of time the quarry is open before the industrial estate is operating with the waste management centre after the quarry has been restored.

5.3 BASELINE CONDITIONS

The Application Site and its General Operation

5.3.1 The site is situated immediately north of the classified adopted single carriageway known locally as Went Edge Road, the B6474 and is located within close proximity to the A1 where all quarry traffic enter the national road network. The workings in area 8 will come within 30 metres of the boundary with the B6474.

5.3.2 The traffic count to the immediate west of the quarry access on Went Edge road revealed that over the working day there were 200 vehicle movements associated with the quarry. The other vehicle movements were measured between 07:00 to 09:00 and 16:00 to 18:00 hours east of the access road and as no quarry traffic should be going towards Kirk Smeaton the traffic is all cars and vans associated with commuting or work movements. The traffic counts were noted at the access road at 46 in the first hour of operation and then on average trips were recorded at 30 vehicle movements per hour until after 14:00 when the HGV's arriving at site reduces dramatically to single figures. It is clear most vehicles have loaded up by the evening peak and left the site. Most vehicles arrive at the morning before the peak period and are loaded through the day so on average there are 40 trips in the two hour period of the morning peak period which included a survey of all types of vehicle west of the site access towards the A1. Inbound after 07:00 was 46 vehicles and outbound were 47 heavy goods vehicles so it can be deduced that most were trucks arriving for aggregate but one or two were plant hire vehicles delivering mortar or concrete. The peak morning period at the industrial estate and the quarry generates 40 trips in and out per hour. This is understandable in light of the types of business at the estate where plant is to be delivered first thing. Aggregate is usually delivered to most sites first thing with only the larger construction sites taking deliveries all day. Refer to the table in the traffic statement on page 7 in appendix 4.

5.3.3 The majority of the site was utilised by Kirk Smeaton Industrial Estate until 1996 when the activity at the quarry increased. The site was used by A1 Yorkshire DAF as a general industrial estate from 1992 who used the warehouse and offices located on site at the surface. The company still has a presence on the site but the management are now are involved in managing the site, waste processing and mineral extraction. The site was previously the Kirk Smeaton Lime works.

5.3.4 In addition to the operations of A1 Yorkshire DAF who have transferred the Environmental Permit for the ELV to Went Valley Aggregates and Recycling Limited there was a container base on site that used one of the surface yards to the east of the buildings. This activity has ceased for the time being as the industrial area is relocated into the base of the quarry.

5.3.5 During A1 Yorkshire DAF's occupation of the site, the company operated on a 24 hour 7 day a week basis. There were 5 employees. The container base also operated on a 24/7 basis.

5.3.6 A1 Yorkshire DAF was an HGV recovery operation and breaker and as such required both deliveries of vehicles from accidents on the road network and shipping of spare parts for DAF trucks on a 24 hour basis.

5.3.7 A gate house and office is situated at the site access into the estate to monitor security. The quarry office and mess area is located at the quarry entrance north of the industrial estate with an adjacent weigh bridge and wheel wash located on the entrance side of the haul road into the quarry. There is a wheel cleaner in the base of the quarry to wash down vehicles before they use the access road to the top of the quarry to be weighed off.

5.3.8 Current traffic movements for the site are 200 movements from the quarry which are on a campaign basis. The normal movements averaged over the year are 140 movements per day. The plant hire firm have between 10 and 20 movements per day and the mortar plant the same.

The Local Highway Network

5.3.9 As discussed previously the site is bordered by Went Edge road to the south which is a flat and straight road from Kirk Smeaton to the A1 and beyond to the junction with the northbound slip road off the A1 into Wentbridge. The access road has excellent sight lines of over 300 metres both ways and drivers can see beyond that distance if in a truck as they sit 2 metres above the road level.

5.3.10 The access to the site is well marked and drivers using Went Edge Road can see HGV's at the access from a distance of 300 metres either side. The road is the national speed limit of 60 mph. The access is constructed to a modern standard as required by planning condition number 25 of planning permission C8/45/13AE/PA (NY/2010/0158/FUL) granted on the 25th July 2013. A new access has been given planning permission to the west of area 6 and Sayles Plantation with reference number NY/2017/0310/FUL granted on 16th November 2018. The access road has been laid out and the internal road surfaced with tarmac.

5.3.11 The adjacent length of Went Edge Road is a publicly maintained single carriageway, which is subject to the national speed limit and has a Traffic Regulation Order within close proximity to the site to restrict vehicle weights to 7.5 tonne unless loading. Went Edge Quarry and the Estate are not subject to the weight restriction between the A1 and the access road into the site. Went Edge Road has a typical carriageway measurement of between 5.5m and 6.0m with no footways but wide verges to the hedges or field boundaries.

5.3.12 Vehicles travel to the site from the A1 and leave with mineral to travel south or north on the A1. No HGV's go through the villages from the site.

Personal Injury Accident Data

5.3.13 Personal Injury Accident data was obtained from North Yorkshire County Council for the past 5 year period and there have been two accidents both of which were unrelated to the quarry. One was related to a hunt meeting on Boxing Day 2012 when a hunt supporter collided with a vehicle whilst attempting a U turn.

5.3.14 The other recorded event was an accident between a cyclist and a bus on Main Street in Kirk Smeaton resulting in minor injuries.

5.3.15 The 2 accidents recorded all were slight in severity and none of them involved collisions with vehicles associated with the quarry. There have been no accidents according to the records kept by Meakin Properties for the quarry or the industrial estate since they acquired Smeaton Limeworks in 1992.

5.3.16 Of the accidents detailed above, they can be attributed to human error. The one on Boxing Day was probably due to sunlight in the driver's eyes and the cyclist and bus were due to a young inexperienced road user.

5.3.17 It is considered that the number of recorded accidents over the last 5 years is extremely low and that the extension to the quarry will have no material impact on highway safety.

Walking

5.3.18 Walking is not an important mode of transport in the area due to the distance between services in the villages and the distance to Pontefract or Askern. Walking will be for leisure purposes in the area and the proposal to extend the quarry will not impinge upon the enjoyment of walkers on the public footpaths in Brockadale Plantation from Kirk Smeaton Post Office to the bridge over the River Went in Wentbridge. The other footpath from Wentbridge to Sayles Plantation and then Went Edge Road will not be affected by the proposal. The public have to walk on the verge if walking from Wentbridge to Kirk Smeaton as there are no footpaths on the B6474.

5.3.19 Walking stimulates both personal health, the health of communities and local economies and are promoted in all health guidance and in planning terms. Walking has been identified as having a major role in improving the

health of the nation and for most people walking is the best physical activity for maintaining and improving fitness and health. Government health improvement advice states that just 30 minutes brisk walking 5 times a week can bring about significant reductions in the risk of coronary heart disease, high blood pressure and diabetes.

5.3.20 In relation to the application site, pedestrian facilities on public footpaths are located away from the site and abundant within the surrounding area. The only impact on the walking public when walking on Went Edge road will be change in landscape as the quarry is stripped of soil and this is placed in bunds in the field. The quarry has changed over the past 18 months as landscaping has taken place on the boundary of the site next to Went Edge Road.

5.3.21 Numerous traffic free routes are located within close proximity of the villages of Kirk Smeaton and Wentbridge linking them to Little Smeaton and Upton.

Cycling

5.3.22 Like walking cycling has an important part to play in reducing congestion improving accessibility, reducing greenhouse gas emissions and pollution. Planning Policy 4 in the NPPF discusses sustainable means of transport. Government Policy states that cycling has the potential to substitute for short car trips, particularly those less than 5km. The area is suitable for short cycling trips between villages but is too far for journeys to the shops or work.

5.3.23 Cycling is a relatively accessible mode of transport and has the potential to make a significant contribution towards strategies for promoting physical activity. The bicycle is generally more affordable than the car and hence there are social equity benefits to the promotion of cycling. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach. Cycling can also possibly improve the travel options for those on a low income.

5.3.24 With respect to the quarry and the application site, numerous cycling opportunities are available connecting the local area. There is a National Cycle Network route on the B6474 north of Wentbridge and the route is in easy distance of Kirk Smeaton. There are not many cyclists use the route past Went Edge Quarry but the traffic generated by the quarry in the day

to day activities will not affect cyclists. Further details concerning the available cycle routes can be found on http://www.sustrans.org.uk/.

Bus Travel

5.3.25 There are bus stops located within Kirk Smeaton, and the service 409 calls at Kirk Smeaton and then to Womersley and the Darrington Hotel. Service 408 calls at Thorpe Audlin, Wentbridge and the Darrington Hotel so the bus routes are different and do not travel along Went Edge Road passed the quarry entrance.

5.3.26 A summary of the available services from these stops is as set out as follows;

Services 408/ 409/ 420

Doncaster Interchange to Pontefract Bus Station

Monday – Saturday	Approximately Every 60 minutes
Sundays and Evenings	None

5.3.27 As can be seen from the above the bus services available encompass the villages on route to Pontefract and Doncaster and offer an hourly service. Employees at the quarry and the industrial estate have no realistic opportunity to utilise public transport as a means of commuting to work so they use cars.

5.4 KEY IMPACTS AND LIKELY SIGNIFICANT EFFECTS

Introduction

5.4.1 To facilitate the ongoing extraction of magnesium limestone at the quarry for building stone and high quality aggregate there will be similar traffic movements associated with the application over the next 10 years as the quarry is planned to remove reserves of stone that will not affect the businesses on the estate until a new location has been prepared in the base of the quarry.

5.4.2 As noted discussed in **Section 2** of the Environmental Statement the proposed development consists of the following:

9.7 hectares of arable land to be taken out of use and the limestone extracted over a period of 6 to 8 years with restoration by December 2042 years.

- Further reserves exist at the site in addition to the 1 year for Areas 6 and 7 recently granted planning permission in September 2018 to extend the existing Quarry
- Existing Waste Management Operations on site.

5.4.3 This part of the report assesses the impacts of the development and considers the following:

- Existing Issues
  - Extraction over a 6 to 8 year period and restoration beginning in 2020 in area 5 and 6.
- Existing Traffic Movements
- Road Capacity
- Future Development Impact Design in Year: 2026

Existing Issues

5.4.4 As previously mentioned the site is well catered for in terms of sustainable transport links, most notably the public footpaths and the local cycle routes. The sole existing issue relates to the lack of footways on the B6474 Went Edge Road within the immediate area which restricts use of the road. The area is rural and most people will travel by car to work or to shop and travel along Went Edge Road to the A1.

5.4.5 The issue is not a particular concern for those walking as it is will be for leisure and is either on the off road public footpaths or out of the hours that the quarry will be working such as weekends and bank holidays.

5.4.6 It is not considered that the lack of pedestrian footways along the B6474 is detrimental to highway safety.

Proposed Traffic Impact: Remediation & Extraction

5.4.7 As previously discussed the site will be extended to provide additional reserves of Magnesium Limestone for mineral extraction in area 8 after

working area 6 & 7 as part of the long term plan to coordinate the removal of limestone and the renewal of the estate buildings and yards now it has been relocated into the base of the quarry.

5.4.8 The extraction will be carried out over a period of 7 years when the other parts of the quarry that have planning permission are to be worked in the floor of the quarry at 20 metres aod and to obtain the remnant reserves near to this application area.

5.4.9 The stages and associated time periods are as follows:

	Stage	Time Period
1	Initial topsoil strip in 50 m widths in the extension - 1200 BCM	2 weeks at a time
2	Subsoil Removal 700 BCM/Week)	4 weeks
3	Limestone Excavation 12000 BCM/Week	350 weeks
4	Crushing 9700 BCM / 20000 t	350 weeks
5	Hewn Building Stone 360 CBM per week	500 weeks
6	Site Establishment and Bunds	3 weeks

BCM (Bulk Cubic Metre) = 2.2 tonnes of stone.

5.4.10 With respect to the above the most significant stage in terms of traffic impact is the stage 3 excavation in the table above. A total of 4.9 million tonnes of Magnesium Limestone will be removed from area 8 and then there is the stone within the permitted area 7 adjacent to area 8 which currently supports the land to the east which has been estimated at 0.2 million tonnes. The site will operate on a 5.5 day week (Monday – Friday 0700 – 1900, Saturday 0700 – 1300). These hours are the same as the original IDO 237 planning permission reviewed on the 17th June 1994 and reviewed in 2015 with reference number NY2010/0317/MRP, the later planning permissions in 1996 and 2002 and now common on all the planning permissions for the site.

5.4.11 Allowing for the extraction rates to be maintained at the quarry and the various products sold vehicle movements have been considered to be the same as the current operation over the past 10 years, on a 5 and half day week basis and going back to 1992. On average 2,400 tonnes will be transferred per day in trucks with 18 tonnes capacity although articulated trucks with a 27 tonne capacity (regulated by the weigh bridge) have been used, equalling 133 truckloads per day leaving site. This can be split into two way journeys per hour which is considered to be easily

accommodated within the local highway network. On occasions the output is likely to be 2,700 tonnes per day which is 150 loads leaving the site. This is on a campaign basis and is usually for a short period of time during the spring and summer. There is expected to be 200 traffic movements associated with the quarry and industrial estate as shown in the table 3.1 in the Traffic Report dated July 2016. The Traffic Statement prepared by NTP considered the 40 movements in an out of the site per hour. As the site is in operation now and the current levels of truck movements are between 100 and 120 in and out of the site then there is no increase in traffic movements over and above what can be expected due to the upturn in the construction sector and the previous traffic associated with the container base. This level of traffic is well within the 10% daily traffic variation threshold from the IEMA guidelines.

5.4.12 Loaded wagons will turn right out of the site onto the B6474 and proceed to the A1 and then to the designated customer. The existing traffic from the quarry travel the same route and there will be no change to the current routes or frequency.

5.4.13 It is considered from the traffic counts and the capacity that the highway network can easily accommodate the traffic from the quarry for the foreseeable future and they reflect the ongoing operation.

5.5 SUMMARY

5.5.1 The proposed development is to continue working the site for Permian Limestone now that relocating the current businesses on the industrial estate to the floor in the quarry has been completed within the 2 year term plan whilst working area 5, 6 and 7. The reserve in area 8 will not impinge on the operations in the industrial estate which currently are ancillary to the mining operation or are waste management operations that have planning permission.

5.5.2 As part of the continued working of the quarry, improvements to the site access and its junction with Went Edge Road have been carried out to modern standards in cognisance of the guidance issued by the extractive industries professional bodies and the Area 3 planning permission NY/2010/0158 for the site. The road works scheme was completed for the area 4 application, reference number NY/2014/0113/ENV granted in July 2015. A new access has been granted planning permission to form a one way system into the quarry and industrial estate in November 2018 with

reference numbers NY/2017/0310/FUL, (C8/2017/0374/CPO). The applicant has agreed to provide a contribution to repairing the B6474 with machine time and capital.

5.5.3 The proposed extension to the quarry in area 8 to the east of the existing quarry will have no greater impact on the road network as there is an established use for the quarry and industrial estate and the use of the road for delivery of products is still well below the capacity of the network to the A1. There will be no increase in traffic other than the normal traffic associated with the quarry to meet fluctuation in demand.

5.5.4 As can be seen from the above information the proposed site should operate without any capacity or road safety issues and there is no highway related reason why permission should not be granted.

6.0 AIR QUALITY

6.1 INTRODUCTION

6.1.1 Cromwell Wood Estate Company Limited was engaged to consider the effects of dust from site activities at Went Edge Quarry, near Kirk Smeaton in North Yorkshire. The study commenced with an inspection of the site on 6th April 2013 for area 4 and through the discussions with the MPA and the Environmental Health Department at Selby Council for the previous applications in area 4, 5, 6, 7 and the ROMP it was decided to review the air quality and dust management process in July 2015 and provide a report. In light of new guidance on the management of dust and air quality together with the proximity of the receptors to the east and north is was decided to provide a new report for area 8.

6.1.2 The applicant engaged DustScanAQ to undertake a comprehensive assessment of the sources of dust, the potential for off site emissions and the risk from PM_{10} particles in the air for planning permission NY 2016/0185/ENV. This report was undertaken in the spring / summer of 2015 when the weather had been dry and the report was provided to the MPA to enable them to determine the application for Area 4 on the 14th July 2015 and Areas 5, 6 & 7 application in September 2018. Dust-Scan has prepared another report for the extension into area 8 after discussing the proposal with the Environmental Health Officer at Selby Council in November 2018. The report is included in appendix 12 and concludes that the quarry can be extended into area 8 with minimum effects on air quality if the current management procedures are maintained that exist in the present working area and are used in area 8.

6.1.3 The planning agent has over 20 years' experience of undertaking dust and air quality assessments for mineral extraction, landfill and redevelopment projects for coal mines and numerous quarries as the principal of an independent planning and environmental consultancy. DustScanAQ are a specialist air quality consultant dealing solely with the control of emissions from mineral workings, waste operations and industrial sites such as cement plants. The technical report is included in appendix 12 and is relevant to working area 8 as the future programme of working was discussed with Dust Scan before the work was commissioned and completed. Dust-Scan prepared the report for working areas 4, 5, 6 & 7.

6.2 METHODOLOGY

6.2.1 Any changes to air quality as a result of a development project, either local or regional, require to be assessed.

6.2.2 The starting point in any assessment is to determine the existing conditions before the development commences. For the Went Edge site, background pollutant concentrations are taken from the Defra web site, www.airquality.co.uk, where the information is provided as a series of maps or at 1 km grid intersections based on Ordnance Survey coordinates. If available, this information is supplemented by more local air quality monitoring.

6.2.3 The development is then studied to identify those elements that could result in changes to air quality, taking account of any mitigation measures that are being proposed as an integral part of the design.

6.2.4 Any change to the baseline conditions is then assessed, qualitatively, to determine the level of significance of any change.

6.2.5 If necessary, additional mitigation measures are suggested that would reduce any negative impacts arising as a result of the development. The magnitude of any residual impact is then assessed.

6.3 PLANNING POLICY AND AIR QUALITY STRATEGY

6.3.1 The planning practice guidance note that accompanied the NPPF discusses dust and air quality. The NPPF in paragraph 181 advises that planning policies sustain compliance and contribute towards EU limit values and national objectives for pollutants, taking into account the presence of Air Quality Management Areas. Any air quality consideration that relates to land use and its development is capable of being a material planning consideration. The quarry has planning permission for mineral extraction and the conditions relating to air quality and control of dust are modern, enforceable and reasonable.

6.3.2 The air quality standards operable in the UK are those specified in European Union Directives and those specified in the UK Air Quality Strategy (AQS). Selby Council have not had to declare an Air Quality Management Area.

6.3.3 In the UK Part IV of the Environment Act 1995 sets out a system for local air quality management in which local authorities are required to undertake periodic reviews to assess current and future air quality against objectives specified in the Air Quality Strategy.

6.4 SCOPING AND CONSULTATION RESPONSES

6.4.1 In a reply to requests for a scoping opinion on the proposed development for area 8, and discussions when the officer has visited site, the Principal Environmental Health Officer of Selby Council (SC) requires that dust needs to be controlled by good management techniques such as a wheel wash and damping down haul roads to keep dust to a minimum, deposits of mud on the highway should be controlled and bulk aggregate material vehicles should be sheeted before leaving the site.

6.4.2 The Officer at Selby Council stated that mud on the road from vehicles leaving the site should be controlled and this has been achieved by the upgrading of the access and facilities at the quarry to wash vehicles and a dedicated road sweeper for the sealed roads.

6.4.3 From the discussions with the officer by the air quality consultant DustScanAQ an air quality assessment and objective report was undertaken which is included in Appendix 12. The previous report from 2015 considered the working of area 5, 6 & 7

and the consultant has been able to assess the management procedures introduced in that report for the forthcoming application to work area 8. Those management procedures are still relevant to the operation and the proposal to extend the quarry into area 8 from areas 5, 6 and 7. The conclusion of the report is that the quarry can operate safely and not cause emissions to atmosphere of NO_2 or PM10 particles that could affect the air quality. Good management procedures need to be in place when the weather is dry prevent dust being deposited on the trees and grass on the edge of the SSSI as there is a highly effective pathway to the woodland. There are no amenity problems with the neighbouring properties such as the Cottage on houses on Jackson Lane.

6.5 BASELINE CONDITIONS

6.5.1 As previously discussed, the levels of background pollutants have been taken from the Defra data published on the web, corrected if required to the years of interest.

6.5.2 Projected PM_{10} values year in 2012 and 2010, the year at the end of which the current outstanding air quality objectives are to be achieved, have not been required as the Local Authority have not had the need to declare an AQMA. There is the proximity of the A1 to consider in the baseline conditions but the road is 700 metres west of the quarry. The conditions are discussed in section 4 of the DustScanAQ report and PM_{10} levels in section 5.

6.5.3 Under Part IV of the Environmental Act 1995 local authorities are required to review and assess air quality in their areas to identify areas where air quality is unlikely to meet the objectives prescribed by the Air Quality Regulations 2000 and the Air Quality (Amendment) Regulations 2002 within the relevant periods. The Government has recommended a phased approach to the review and assessment process, the intention being that local authorities only undertake as much work as necessary dependent upon the extent of the air quality problems in their area.

6.5.4 The Act requires that local authorities review the air quality in their areas with regard to seven specified pollutants; nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon dioxide (CO), lead, fine particles (PM_{10}), benzene, and 1, 3-butadiene. The Governments Expert Panel on Air Quality Standards (EPAQS) has recommended air quality standards for these pollutants based upon their health effects. These have been translated into a set of statutory objectives, which must be met between 2003 and 2010 dependent upon the pollutant.

6.5.5 The UK Government and the devolved administrations have set new national air quality objectives for $PM_{2.5}$, but which have not been incorporated into LAQM Regulations.

6.5.6 Where a local authority finds that a prescribed objective is likely to be exceeded it must declare an Air Quality Management Area (AQMA) and draw up an action plan identifying changes that will be necessary to improve air quality.

6.5.7 The Updating and Screening Assessment of Local Air Quality Management issued by Selby Council (MBC) concluded that the objectives for carbon monoxide, lead, benzene, 1.3 butadiene, sulphur dioxide and PM_{10} would all be achieved at relevant locations. However, potential exceedances of the annual mean particulate matter (PM_{10}) objectives were identified at Kellingley Colliery 10 times in the year which is below the 35 exceedances allowed in one year. The colliery closed in December 2016 and Eggborough power station is only used when base load is required during times there is no wind or there is demand in the system which can be predicted. The owner is seeking a consent order for a gas fired power station at Eggborough.

6.5.8 Selby council currently has no Air Quality Management Areas for nitrogen dioxide, sulphur dioxide and PM_{10} and other specified pollutants in the Air Quality Updating and Screening Assessment prepared in April 2016.

6.6 IMPACT ASSESSMENT

Introduction

6.6.1 The stripping of soil, breaking up and processing of limestone rock on site, together with the mineral extraction, processing and despatch have the potential to impact on the local environs with respect to air quality. The process has been reviewed to mitigate dust emissions to the main receptor which is the flora in and around the SSSI.

Defining the Significance of Impacts

6.6.2 The relative importance of the environmental resource in question, i.e. European, national, regional, or local importance.

- whether environmental quality will be impaired or enhanced i.e. a negative or positive impact,
- whether the environmental impact will be direct (such as land-take) or indirect (such as polluted runoff entering watercourses),
- the scale of change resulting from cumulative impacts,
- whether the effect is permanent or temporary and, if the latter, its duration,
- the degree of mitigation that may be achieved through design.

6.6.3 The two principal criteria determining significance are the sensitivity of the receptor and the magnitude of the impact or effect. This assessment therefore combines the sensitivity to change of the various receptors with the assessment of the magnitude of the impact in question in order to predict the significance of the proposed scheme impact.

6.6.4 A three point impact scale ranging from slight through moderate to substantial has been adopted in this assessment. These significance thresholds are determined from the differing combinations of levels of sensitivity and magnitude as shown below;

6.6.5 Generally, the magnitude of the potential impact can be identified as follows:

Substantial: The scale of the impacts is large, the nature of the impact is generally permanent, key elements and characteristics of the baseline are completely lost.

Moderate: The scheme would result in direct and indirect impacts leading to a noticeable change in the environment; the scale of the impacts are moderate, the nature of the impacts are generally permanent, key elements and characteristics of the baseline are completely lost.

Slight: Direct and indirect impacts would result from the scheme leading to a slight change in the environment, the scale of the impacts are low, the nature of the impacts are either permanent or temporary, only minor loss or alteration of key elements and characteristics of the baseline ecology.

6.6.6 The Defra document Local Air Quality Management LAQM Technical Guidance TG (09) states that total emissions of pollutants from sources such as quarrying are such as not to warrant detailed studies by local authorities, but in the case of PM_{10} fugitive emissions from activities such as quarrying and bulk material handling may form a significant component of ambient PM_{10} levels.

6.6.7 Earlier guidance from Defra states that coarse particles are thought to contribute about 10 μgm^{-3} to annual mean concentrations of PM_{10} across the UK. Of this, quarrying and construction work are thought to account for less than 1 μgm^{-3}.

6.6.8 The contribution from the site activities has therefore been taken as 1 μgm^{-3}. LAQM TG(09) includes a method to calculate the number of 24 hour exceedances of 50 μgm^{-3} from the annual mean concentration of PM_{10} if required. As PM_{10} levels have been monitored at Kellingley Colliery it is not thought that any calculations are required at Went Edge Quarry.

6.6.9 Comparison against the air quality objectives given in Table 1 show that for the 1 km grid square which contains the Went Edge Quarry site neither the number of exceedances of the 24 hour mean or the annual mean concentration of PM_{10} will be exceeded if the development was permitted.

6.6.10 Scale of the impact is therefore considered to be slight with the nature of the impact temporary, with only minor loss or alteration of key elements and characteristics of the baseline ecology.

6.6.11 Dust emissions are likely to be of a size >PM_{30} which travels over short distances when entrained in air is more nuisance than affecting bio systems.

6.7 MITIGATION

6.7.1 Although the mineral extraction, processing and site restoration could have the potential to affect local air quality the following measures have in the past controlled dust emissions and will minimise any adverse effects.

6.7.2 Screening mounds, solid boundary fencing and tree planting around the site boundary will mitigate dust blow from winds across the flat land to the south of the site.

6.7.3 Removal of any soil material should be undertaken prior to main site activity as it will leave a hard rock surface to run on when extracting limestone.

6.7.4 Earthmoving and material processing activities to be sprayed regularly with water in dry periods of weather.

6.7.5 The number of handling operations and drop heights will be kept to a minimum when loading.

6.7.6 Vehicles and plant will be fitted with diesel particulate filters, use low sulphur diesel and be regularly maintained.

6.7.7 All road going vehicles removing bulk materials from site will be sheeted and will use a wheel wash.

6.7.8 Regular watering and sweeping of public roads around the site will be done in periods of dry weather.

6.7.9 The majority of winds are from the Atlantic and as they travel across the country in a north easterly direction showers are brought in that will damp down dust. The weather station at Sheffield illustrates there are times when there are drier winds from the east when there is high pressure that could lead to longer periods of dry weather beyond 3 days. Weather Conditions will be monitored in advance so that a programme of dust suppression can be implemented if there are going to be dry periods of weather in excess of 3 days.

6.8 SUMMARY AND CONCLUSIONS

6.8.1 The existing and projected future PM_{10} concentrations have been considered for quarrying operations and policies in the NPPF in particular paragraph 181 and the Planning Practice Guidance advice on Air Quality and compared against Air Quality Objectives for Selby Council. The dust assessment has been undertaken in accordance with table 6 in the TGN and the latest IAQM guidance on mineral extraction.

6.8.2 The Air Quality Objectives for PM_{10} are expected to be achieved either with or without the development. There are dust sensitive facilities nearby and the quarry extension is located some 50 metres south of the SSSI at Brockadale Plantation. From the information available on the SSSI there has been no impact on the biodiversity or habitat of the area due to quarrying because of the management of emissions to air. The air quality expert and the ecologist have reviewed the means of reducing the potential for dust deposition on the woodland leaves.

6.8.3 Whilst there may be a small decrease in local air quality due to the proposed development during the soil stripping site work it is likely to be the same as the baseline position now for the existing quarry when mineral extraction begins in these areas and should at no time result in air quality criteria levels being exceeded.

6.8.4 The extension to the quarry and further extensions in the future should not have a detrimental effect on the biodiversity of the area or the enjoyment of the amenity on the public footpaths near the quarry in Sayles Wood and Brockadale Plantation.

6.9 REFERENCES

- The Pollution Prevention and Control Act (1999).
- The Pollution Prevention and Control Regulations (2000).
- Part IV of the Environment Act 1995. Local Air Quality Management. Technical Guidance LAQM TG(03). Scottish Executive, National Assembly for Wales, Department of the Environment, Department for Environment, Food and Rural Affairs (Defra).
- www.airquality.co.uk – Defra.
- Guidance on the Assessment of Mineral Dust Impacts for Planning, IAQM, May 2016. V1.1
- Part IV of the Environment Act 1995. Local Air Quality Management Technical Guidance LAQM TG(09). February 2009. Department for Environment, Food and Rural Affairs.
- Selby District Council Air Quality Report - April 2012.

7.0 NOISE AND VIBRATION

7.1 INTRODUCTION

7.1.1 Cromwell Wood Estate Company Limited were engaged to consider the effects of noise and vibration from site activities at Went Edge Quarry and the extension of the limestone extraction in the land acquired by the applicant and now known as area 8

7.1.2 The noise study for the quarry operation commenced with an inspection of the site and subsequent monitoring of existing noise levels on 12th June 2012 by Worksafe Consultancy Services to monitor noise emissions as the quarry was working in the western most area of the quarry near to the office and weighbridge. This area is the nearest to the village of Wentbridge and the farmhouse on the opposite side of the A1 from the quarry. It is also within 250 metres of Jackson Lane albeit in the base of the quarry and separated from Jackson Lane by the River Went and the valley which is Brockadale Plantation SSSI.

7.1.3 Due to the date of the report and the area where work was taking place at the time albeit nearer to the receptors on Jackson Lane than the eastern areas of 3 and 4 it was decided by the applicant to update the report and assess the noise from the working in area 7 and the soil mound building in area 7 as part of that application and a report was completed in February 2017 updated from the report provided by the same company on 28th November 2014. The assessor and report author Mr. Garritt has over 20 years of experience of assessing noise and vibration from mineral extraction, landfill, commercial waste operations and reclamation schemes. The technical report is included in appendix 5.

7.2 METHODOLOGY

7.2.1 The working of any mineral deposit has the potential to create a certain degree of environmental disturbance to locations in its immediate vicinity.

7.2.2 This may be occasioned in the form of noise and vibration and it is therefore essential that any such potential is recognised and tightly controlled by safe and up to date site working practices and by strict site management.

7.2.3 The mobile plant used to extract limestone and backfill material against the open face once mineral extraction has ceased has the potential to produce vibration and increase existing noise levels at nearby properties which are in excess of 300 metres from the site towards the north-west.

7.2.4 Accordingly, the existing noise climate has been assessed at neighbouring properties and predictions of maximum likely future noise levels due to site operations have been made for several nearby properties according to the principles of the relevant British Standards. Refer to section 4 of the report

7.2.5 All the predicted noise levels refer to worst case scenarios, when operations are undertaken at their closest distances to sensitive properties and therefore have the greatest influence on the noise climate at these locations. These worst case noise

predictions may only last a few weeks throughout the envisaged working life of the proposed site.

7.2.6 Vibration levels at the closest residential property to the site known as the Cottage has also been considered and there is no vibration to properties in the valley or on Jackson Lane to north due to the valley and there being pathway for vibration in the beds of limestone as the valley is on fluvial material over coal measures strata. The site is not in close proximity to communities as they are located in Kirk Smeaton and Wentbridge which are 1.2 kilometres away apart from the dwellings on Jackson's Lane which are 400 metres away to the north over the Went Valley. The Cottage is 150 metres away from the quarry located in the valley of the River Went and is 20 metres below the crest of the quarry face and the top of the crag in Brockadale Plantation.

7.3 ASSESSMENT CRITERIA

NOISE

There is a lot of research into noise emissions from minerals working with the culmination being the Minerals Policy Statement (MPS) 2: Controlling and Mitigating the Environmental Effects of Mineral Extraction in England. The guidance was withdrawn in March 2012 and replaced in the National Planning Policy Framework with a Technical Guidance Note (TGN) and paragraph 28 to 31 deal with noise standards. The MPS has been referred to as it provided a lot of detail on mitigation and design which has been incorporated into the design for the quarry working and Area 8. The Planning Practice Guidance on line provides advice on the control of noise from quarries in paragraph 019.

7.3.1 In paragraph 204 of the NPPF bullet point g is the latest Government advice applicable in England to the control of noise from surface mineral workings and the guidance is provided in the planning practice online facility. Paragraph 21 recommends the setting of absolute values for noise limits, linked to daytime, evening and night-time working periods, defined as 07:00 - 19:00 hours, 19:00 - 22:00 hours and 22:00 - 07:00 respectively.

7.3.2 Subject to a maximum of 55 dB $L_{Aeq\ 1h}$ (free field) Mineral Planning Authorities (MPAs) should aim to establish a noise limit at the noise sensitive property for both daytime and evening activity that does not exceed the background level by more than 10 dB(A).

7.3.3 It is recognised, however, in the Planning Practice Guidance that this will in many circumstances be difficult to achieve without imposing unreasonable burdens on the mineral operator. In such cases the limit should be as near that level as practicable during normal working hours (07:00 - 19:00) and should not exceed 55 dB(A) $L_{Aeq\ 1h}$ (free field).

7.3.4 Evening (19:00 – 22:00) limits should not exceed background level by more than 10 db(A) and night-time (22:00 – 07:00) noise from site activity should not exceed 42 dB $L_{Aeq\ 1\ hour}$ (free field) at noise sensitive dwellings.

Temporary Sources of Elevated Noise Levels

7.3.5 The Planning Practice Guidance states in paragraph 22 that "All mineral operations will have some particularly noisy short term activities that cannot meet the limits set for normal operations. Examples include soil stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, construction of new permanent landforms and aspects of site road construction and maintenance. However, these activities can bring longer term environmental benefits".

7.3.6 Increased temporary daytime noise limits of up to 70 dB $L_{Aeq\ 1h}$ (free field) for periods of up to 8 weeks in a year at specified noise sensitive properties should be considered to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring longer term environmental benefits to the site or it's environs. Where work is likely to take longer than 8 weeks a lower limit over a longer period should be considered.

7.3.7 Noise monitoring has been undertaken by S.D. Garritt in February 2017 to monitor noise emissions from the quarry around the perimeter and outside the nearest residential dwelling in Went Valley and the properties on Jackson's Lane whilst the quarry was working in area 5.The earlier report from November 2014 was for the field to the south of the industrial estate and was updated for areas 6 and 7 in February 2017 so the whole extent of the quarry was assessed. The June 2012 report by Worksafe Consultants was for the area near to the north western boundary of the quarry, the nearest point to Jackson Lane.

7.3.8 The February 2017 Garritt report describes the operations on site and the machines that are used to work the limestone. Measurements were taken on the 23rd February 2017 at the locations 1, 2 and 3 and information taken near to the operating face at that time in area 5. Noise readings were taken at Jackson Lane, Went Edge Farm to the south east and the boundary of Kirk Smeaton village near the top of the face that was being worked on the west side of the existing quarry and in the floor of the quarry where activity was taking place to obtain sound power levels of the machines. Further readings were taken on the perimeter of the quarry when the site was on break time and again during that time but when a truck was entering site to be loaded. In the June 2012 report readings were also observed above the A 1 to gauge the traffic noise and at Brockadale Sett on Jackson's Lane to assess the noise emissions to the nearest receptor and differentiate the noise emissions from the quarry and the A1. All three noise reports are included in the appendix 5 to the ES.

7.3.9 The noise levels found in the quarry were typical of operations and sound power levels of machines whilst operating. The perimeter noise levels near the office and taken to be at the western boundary of the site nearest the receptors were taken whilst the quarry was winning limestone and processing the stone and when there was a lunch break so noise emissions could be taken to be background from the industrial estate and traffic arriving at the quarry.

7.3.10 The conclusions of the noise survey was that the quarry complied with the levels set in the existing planning permissions at the boundary of the site during day time working of

55 db(LA_{eq}). The noise levels in the floor of the quarry were just above 70 dB(LA_{eq}) whilst machines were operating but they are attenuated by the quarry faces and stockpiles. The noise emissions measured at the nearest noise sensitive property on Jackson's Lane was between 45.4 dB (LA_{eq}) and 48.8 dB(LA_{eq}) and this could be attributed to road noise from the A1 trunk road.

7.3.11 The extension to the quarry is a further 250 metres south east of the noise monitoring locations on the west side taken on the 23rd February 2017 and it is clear that the houses on Jackson's Lane will not be affected by noise emissions at the surface when soil stripping takes place and screen bunds built. When mineral extraction takes place in this area the noise emissions will be attenuated by activities in the quarry behind screen bunds or in the base of the quarry. The buildings at Went Edge Farm are nearer to Area 8 but the nearest phase will be 8C 1 and screen mounds will be in place.

7.3.12 Some complaints of noise had been noted outside working hours at the quarry in 2012 and 2014 and the applicant investigated these sources as it was clear that it was not from the quarry. The background noise is from traffic on the A1 and as the area is for arable farming then large pieces of agricultural machinery do cultivate the land in the autumn, spring and summer.

7.3.13 From discussions with the Environmental Health Officer at Selby Council it was decided to take a further noise monitoring surveys and predict levels of noise with and without attenuation from the soil mounds from the area 5 field in November 2014 and for Area 6 and 7 in February 2017 to predict the levels of noise to the Cottage and residential dwellings on Jackson Lane. The applicant engaged S.D. Garritt in February 2017 to review the earlier reports and take noise measurements at the quarry around the machines and the drill rig and then on Jackson Lane. The report is included with the Environmental Statement in the technical appendices section in appendix 5 and the conclusion is that the quarry can comply with the noise limits provided for in the planning permissions.

7.3.14 The measurements were taken at Jackson Lane, Went Edge Farm and the nearest dwelling on the western side of Kirk Smeaton Village. The predicted levels of noise from the quarrying and recycling activity in area 5 and the quarry as a whole was between 30 and 35dB(A) . The background noise levels measured at the receptors was between 35 and 43 dB(A) so the quarry will be inaudible to the residents over other noise sources in the area.

7.3.15 When soil stripping is taking place and the formation of bunds then the levels of noise are predicted to be up to 10dB(A) above the background levels of the receptors but this is still less than 50dB(A) during the day. The proposal complies with the guidance issued by Government on noise emissions and control on mineral workings.

VIBRATION

7.4.1 Much investigation has been undertaken, both practical and theoretical, into the damage potential of ground vibration. The consensus is that the vibration parameter best suited as a damage index is peak particle velocity.

7.4.2 The British Standards Institution have produced a relevant document BS 5228-2: 2009, Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

7.4.3 This document details vibration limits for both transient and continuous vibration in respect of levels to preclude the most cosmetic of damage in residential type buildings i.e. the very finest of plaster cracks that would normally go unnoticed.

7.4.4 In this instance concern could be raised over the use of quarry machinery when working and tracking over the site and compacting material as part of the restoration of the site. Continuous vibration criteria would be the most appropriate. Such criteria are given as one half of those for transient vibration, for example that produced by blasting operations.

7.4.5 Hence, safe criteria from BS 5228 to preclude cosmetic damage from such activity are seen to range from 7.5 to 25 ms^{-1}, depending upon the specific vibration frequencies on site.

7.4.6 Due to the distance and topography to the nearest residential dwellings on Jackson's Lane vibration from machinery on the quarry site will not be noticed. The vibration could not travel that distance as the limestone is severed by the River Went so the houses on the opposite side of the valley are not connected by beds of limestone. The only continuous pathway is in the coal measure strata below and that will not suffer from vibration by tracking machines in the quarry due to the depth below the surface of at least 7 metres.

7.4.7 Blasting takes place at the site and the measurements have been taken regularly by the blasting contractor as part of the blast design under the Blasting Regulations in the Quarries Regulations 1999 to ensure that the vibration normally measured by the Peak Particle Velocity is controlled to the limits set in the existing planning permissions.

7.4.8 A specific criterion for possible damage to buildings is difficult to define since the condition and type of such buildings will vary from site to site and perhaps even within a particular site.

7.4.9 Much work that has been undertaken concerning perceived damage to buildings from blasting at quarries and opencast coal mines, both in the United Kingdom and the USA and it is clear that vibration levels such as those routinely generated by quarry site blasting in this country, for example with PPV's of 6 mm/s, fall very far below those levels necessary to cause minor damage to buildings until blasting is very near to the properties.

7.4.10 Investigations into the effects of blast induced vibration on the stability of underground excavations have been undertaken by Langefors and Kihlström, Bauer and Calder and

Oriard. Other work has been undertaken on blasting of rock in quarries on underground tunnels carrying water and the peak particle velocities measured in the tunnel wall.

7.4.11 Langefors and Kihlström predicted rock falls underground at peak particle velocities exceeding 305 mms^{-1} and rock fracturing at 610 mms^{-1}. Oriard suggested that most rock masses suffer some damage at peak particle velocities of 635 mms^{-1}. Bauer and Calder predicted damage criteria for rock masses based on the stresses produced by particle velocity in ground motion due to blasting concluding that below 250 mms^{-1} fracturing of rock will not occur, and that vibration levels of 2500 mms^{-1} are necessary to break rock.

7.4.12 A survey undertaken by the United States Bureau of Mines details the effect of surface blasting on an underground coal mines (tunnels) where no change in the frequency of rock falls or any other indication of apparent damage were noted with peak particle velocities of up to 440 mms^{-1} being recorded.

7.4.13 As previously noted, criteria for the continuous vibration to be expected from the compacting machinery used for restoration and backfilling of the quarry with mineral waste are one half of those for transient, or blasting operations.

7.4.14 Hence, safe criteria for mine shafts, tunnels and underground mine workings are of the order of hundreds of millimetres per second. This compares with the readings and vibration measured on properties near to opencast coalmines and the research undertaken on structures to cause cracks in the structure by the US Bureau of Mines.

7.4.15 The quarry has blasted rock in the western part of the quarry which is the nearest to the residential dwellings on Jackson's Lane in June to August 2012 and there has been no cause for concern from residents. The limestone beds where the vibration would travel have been truncated by the river Went so there is no continuous bedding plane for the vibration to travel along.

7.4.16 Blasts have been monitored since the current operator took over in 2012 and reports are kept at the quarry office and the survey information is included in appendix 11.

7.5 SCOPING AND CONSULTATION RESPONSES

7.5.1 In the scoping opinion on the proposed development of the quarry dated 21st March 2016, the following comments were received from North Yorkshire County Council. The site should be surveyed for noise emissions to provide additional information to the Worksafe noise survey of June 2012. S&D Garritt provided a noise survey and report for Area 5 and took measurements along Jackson Lane.

7.5.2 The Environmental Health Officer at Selby Council, Diane Adamson requested in a consultation response dated the 15th January 2016 that vibration from the quarry machinery should be addressed and more importantly the vibration from blasting as there had been a number of complaints to the EHO at Selby about blasting over the past 18 months since the Area 4 application was submitted.

7.5.3 There have been a number of complaints to the EHO at Selby Council in 2016 about vibration due to blasting from the residents on Jackson Lane. As the blasting has been at

the furthest point from the residents in area 7 the operator has been monitoring the blast vibrations with vibrographs on the perimeter of the quarry and in houses on Jackson Lane. The owner who used to live in Wentbridge has also been on Jackson Lane when there has been a blast and has not heard anything or felt any vibration. Blasting is now taking place in area 6 and to date there have been no complaints about noise or vibration from blasting.

7.5.4 The vibration from the quarry has been monitored for over 36 months since the complaints began and there have been occasions when there has been a complaint about blasting when none has occurred. The operator furnished the details of the blasts on site and now asks for the details of the complaint and what time it was to check it against the blasting record for the quarry. If there has been a complaint about vibration or noise then the operator investigates the cause whether quarry related or from another source. Other sources are difficult to investigate as it can be traffic on the A1 or agricultural traffic, shooting or activity. There have been no complaints about noise since investigations were undertaken on Jackson Lane by the applicant.

7.5.5 There have been complaints about traffic movements at the quarry affecting the amenity of the residents on Jackson Lane which have not been proven as the vehicle noise is associated with heavy farm machinery and traffic on the A1. HGV's visit the quarry between 07:00 and 18:00 on weekdays, and 07:00 to 13:00 on Saturdays to collect limestone aggregate. The noise report has specifically looked at truck noise on the access road and the B6474 and the operation complies with the limits on noise for mineral extraction. The industrial site can operate 24 / 7 so vehicles can access the site at any time but normally vehicles visit the site at the same times as the quarry is operational. Noise surveys have been undertaken on the activities including traffic generation and the effect on Jackson Lane is within the guidelines of the NPPF and the technical guidance.

7.6 BASELINE CONDITIONS

Noise

7.6.1 Noise sensitive locations are residential or agricultural properties that were identified and monitoring of noise levels has been undertaken at a number of these properties over the past 7 years, sufficient to be representative of the closest noise sensitive locations to the site. No other receptors were included such as schools, hospitals or care homes, around the site boundary as they do not exist within a distance of 500 metres from the site. There is a school at Kirk Smeaton 1.2 kilometres away but this development will have no effect on the school or the children.

7.6.2 The base line conditions are the current operations at the quarry which are mineral extraction, processing of limestone by crushers and screens, extracting block stone and sawing it at the yard in the industrial estate, washing limestone dust for sand, construction and demolition, glass, ceramics and excavation waste processing for recovery. Also considered are the operations at the industrial estate where there is a plant hire company, a mortar plant, batching plant and a yard.

7.6.3 Noise measurements have been taken at the site in August 2012, November 2014 and February 2017 in areas within the quarry that provide a robust survey and assessment of noise from the working of area 5, 6 and 7 and the base line has been established from which this development for area 8 can be compared. The development will use the same machinery and there will be soil stripping near the surface, excavation of limestone down to 3.5 metres and then drilling on the rock head 3.5 metres below the surface. Most of the extractive operations will be below ground so the noise emissions are the same as the ones taken in the noise surveys discussed above.

Vibration

7.6.4 The vibration from machinery on site to the boundary or the users of the industrial estate is not perceptible. Vibration from machines does not occur to users of the surrounding footpaths or the residents in Wentbridge.

7.6.5 Blasting at the site is undertaken at least once a week and occasionally 2 and 3 times per week and the blast time is midday and 3 p.m. Blast monitoring measured by Vibrock has taken place on 16th April 2012 with the monitors being located at the quarry office and the industrial estate office to assess the PPV. The blast was located in the central section of the quarry to the rear of the industrial estate in the ROMP area on the east side face. The PPV ranged between 2 and 4 mm per second for the blast that was adjacent to area 4, the south east corner of the site. The records of the blast are noted and the PPV measured was less than 4 mm/second and is included in Appendix 11 of this statement. Monitoring has continued for each blast and the measurements taken in the houses on Jackson Lane registered no vibration. Further monitoring has been taken for each blast over a period of six months and the blasts have been monitored in houses on Jackson Lane in 2017. There have been no record of vibration in the houses and the operator has had to ring the quarry to see if the blast has taken place. As the working area over the past 5 years has been in the south side of the site the monitoring of blasts has ceased as the area is further away than the ROMP area and the northern area of area 7. Blast monitoring has been considered for Area 6 if there are any complaints from residents. The matter has not been tabled in the liaison meetings.

7.6.6 The blasting at the quarry in the proposed area 8 will be at least 400 metres away from the residents in Wentbridge on Jackson Lane and there is no connecting strata to the houses from the quarry due to the River Went which has carved out the valley down to the coal measures strata beneath the Permian limestone. The nearest noise and vibration sensitive property is the Cottage in the valley bottom and the property is shielded from noise by the face and the woodland on the valley side. Blast vibration is within the PPV limits set on the planning permissions for the quarry and the vibration will be the same for the proposed Area 5 extension.

Baseline

7.6.7 In conclusion the noise emissions from the site operations are attenuated by the screening, open countryside and the distance to receptors from the operational areas in the quarry. The depth of the deposit attenuates the noise emissions as the machines are in the base of the quarry. The drill rig bores holes from the surface for blasting but is

located behind a soil screen so the noise is attenuated by the screen (baffle) mounds of soil and distance to the nearest noise receptor which is the estate office in the industrial part of the site. There is background noise associated with the industrial estate that will mask quarry noise and there have been very few complaints from noise apart from one instance in June 2012 when it was concluded it was traffic noise from the A1 on a Saturday morning. The applicant has investigated noise emissions from the quarry along Jackson Lane. The applicant's quarry manager has personally being at properties on Jackson Lane when there has been a production blast within Area 5, 6 and 7 and has not heard the blast or felt any vibration and has had to confirm the blast has been initiated. The quarry complies with the noise limits set in the planning permissions.

7.6.8 The blasting on site is designed to minimise air overpressure and also reduce PPV in the limestone rock to below 6mm per second and to fracture the rock so it falls into the base of the quarry with the minimum amount of explosives. The explosives used are emulsions which are precisely measured for each hole and blast. The vibration from blasting at the site and in areas 7 and 8 will not impact on the area. The wildlife may be startled by the blast but it does not seem to deter the fauna in the area or the SSSI as it is more of a thud than a bang. The monitoring has provided sufficient information to predict the PPV from the working of area 5, 6 and 7 and area 8.

7.6.9 There have been a number of complaints regarding blasting at the quarry from residents on Jackson Lane in area 5 during 2016 and the operator now checks the blast times and weather conditions against the complaints given to the EHO at Selby DC. The quarry do not provide the times of the blast or the day as it has been found that this will attract complaints even if the blast did not take place for some reason such as a delay in drilling or non delivery of explosive.

7.6.10 Vibration from machines is very near to the tracks and the person or mammal has to be within 5 metres of the machine and the tracks have to be traversing hard rock to vibrate the land. Where there is soil the tracks are cushioned.

7.6.11 The area 5, 6 & 7 excavation has been monitored for vibration and the operation in area 8 will be the same as the present working method and vibration from blasting and tracking over the site will be below the limits set in the planning permission based on the current operations and the machines. The face in area 7 will be open and the drilling and blasting in area 8 will move among the face from north to south and then back again on a cycle of drill blast and load. There is no intention to change the working method or the machines on site. The machines are all new so they have been equipped with the most up o date noise suppression equipment.

8.0 Hydrology, Hydrogeology and Flood Risk

8.1 Introduction

This chapter assesses the hydrological and hydrogeological impacts associated with the extension of the quarry into Area 8 from the information gathered whilst working areas 5, 6 & 7 from the existing quarry and the data gathered from the surrounding area through ecological and water quality surveys over the past 20 years. The aim of this assessment is to determine whether the proposed extension to the east of the quarry will affect the groundwater, surface water drainage, flooding and water quality of the site and surrounds, or whether these factors may impact upon the development. This chapter describes the policy context, input data and methods used to assess the development. It reviews the baseline hydrogeology, hydrology, flood risk and water quality at the site and assesses the potential impacts of the development taking into account the measures which have been adopted to prevent or reduce at the quarry the risk of pollution, mitigate or offset identified impacts, if any, on the water regime and flora and fauna that depend upon the quality of water.

8.1.1 Potential impacts are likely to relate primarily to flood risk and controlled waters protection issues, which could give rise to significant environmental liability. The operational quarry and the application site is approximately 69 acres or 28 hectares in area and is located approximately 0.7 kilometres from Wentbridge, 0.5 kilometres from Kirk Smeaton and 300 metres from the River Went. The site is located 7 kilometres from Pontefract and 16 kilometres from Barnsley, Doncaster, Selby and Wakefield.

8.1.2 The River Went is located approximately 70m to the north of the Area 8 site and it represents the principal source of flood risk. The watercourse is considered as a tertiary watercourse by the Environment Agency (EA). It is the primary receptor that has the potential to be impacted by the proposed development. The impacts to this watercourse have been considered within this assessment considering the existing use as a quarry and industrial estate.

8.1.3 Groundwater contamination, or the possibility of it, is a material consideration for town and country planning, and thus it must be considered in any planning application. This is set out in the National Planning Policy Framework published by the Department for Communities and Local Government (DCLG) in July 2018 and the Planning Practice Guidance which has a section on flood risk and coastal change. Online guidance is updated as required for the technical guidance in relation to risk to the water environment.

8.1.4 The assessment of the hydrogeology of the site considers published information relating to the solid and drift geology of the area, the sites historical use as a quarry and lime works, surveys of the habitat and potential sources of pollution upstream of the site.

Consultations

8.1.5 As detailed in Chapter 1, a formal scoping exercise has been undertaken by the planning agent to inform the applicant of the scope of the Environmental Assessment for working at Went Edge Quarry. This has been based on the scoping opinion that was received from North Yorkshire County Council for area 5. The formal Scoping Opinion dated 21st March 2016 for area 5 is included at Appendix 1.4 and has been used to assess what is required in the Environmental Statement for area 8 as it is approximately the same size as areas 5, 6 & 7. The exercise highlighted the following issues relevant to hydrology and flood risk:

- Site is in Zone 1 – little or no flood risk. Flood Risk Assessment required for the site due to the size of the site - Environment Agency.
- Include a full assessment of hydrology and ground conditions on and adjacent areas to the site.
- Identify all relevant water dependent receptors and assess the risk from the proposal during both the construction and development phases.
- Include appropriate mitigating measures if any are required.

8.1.6 The applicant and the planning agent have reviewed the information required and provided for the Area 4, Areas 5, 6 and 7 applications and decided that the information is likely to be the same for Area 8 after reviewing the responses from the Environment Agency.

8.1.7 The site is currently 49 acres (20 hectares in total) at the present time and these areas will add a further 24 acres (9.7 hectares) to the site that is exposed as quarry working. The site has been inspected on numerous occasions as part of the geotechnical assessment and at no time since 1999 has the quarry being wet. The site and the limestone beds are above the groundwater table by at least 12 metres and when the floor is worked to 20 metres aod it is still 6 metres above the water table measured at its highest level of 14 metres aod.

8.1.8 The water table in the strata beneath the quarry is below the level of the River Went which is at 19 metres aod and flows east through Brockadale Plantation.

8.1.9 The water flow over the site during rainfall is down the haul road in the northwest corner and on the floor of the quarry where the level is 26 metres aod. The floor of the quarry is covered with a thin film of compacted limestone dust which is damp and has filled any vugs or fissures in the floor. Water ponds on the site in shallow ponds relative to the undulations in the quarry floor.

8.1.10 On the north side of the quarry is the haul road and a large pile of quarry fines which prevent water flow to the north towards the River. The strata dips very shallow to the south east so there is a shallower gradient to the east as strike is north east. The direction of strike is practically parallel to the course of the River Went.

8.1.11 The River Went is marked as in Flood Zone 3 and the land immediately around the river is susceptible to flooding. The land on the limestone escarpment to the east of the quarry area and towards Kirk Smeaton is above the flood zone for the River Went. As the flow is due east flooding of the land to the west of the limestone escarpment is due to flow from the land in the exposed coal measures west of the site.

8.1.12 The River Went begins from watercourses in the Sharlston area and other small becks and streams are picked up along the way as the river flows south east and then east through the deep valley at Brockadale Plantation.

8.1.13 Considering other areas of land within 2 kilometres of the site to the east and south there are no watercourses on the exposed part of the magnesium limestone. The land is 30 metres above the river bed and there are crags in the valley from the river to the surrounding land.

8.1.14 The proposed extension will expose a further 8.6 hectares in area 8 of limestone which in storm durations of 10 minutes with 20 mm of rain would produce 1720 cubic metres of water if it was flowing to a point source. As the site is to be stripped in 3 2.8 hectare phases the amount of water will be spread over the exposure and will drain into the limestone and percolate down to the marl bed. As there is at least 1 metre of limestone in the base of the quarry for the machinery to run on this will provide storage for the rainfall. The marl will prevent percolation to the ground below but there is the potential to construct sumps in the base of the quarry for the storage of water in the basal Permian sand which is a medium grained quartzose.

8.1.15 In the base of the quarry the rainfall will be accommodated on the floor in the undulations or will percolate slowly through the compacted fines and the fissures into the limestone and sandstone below so in times of heavy rain it has been observed where there is a film of water over the floor of the quarry to a depth of between 15 mm and 30 mm. After rainfall the water flows to the lowest point in the floor and ponds until it seeps away through the fissures and joint sets or evaporates.

8.1.16 There is a pathway though the limestone to the River Went but the dip of the strata is to the south east so the water would need to flow east or there has to be a preferential pathway to the north. It has been observed that the limestone face on the north side has suffered from water flow erosion in the past as there are fissures filled with clay and soil and vugs that are open where the limestone has been eroded away.

8.1.17 Area 6 is currently being worked after area 7, once the industrial estate was relocated into the IDO ROMP area once are 5 had been worked with it as shown on plan number 2 (WEQ/AR08/PA-02. The field in area 6 has been stripped of topsoil and subsoil and worked in one face of 22 metres high to work down to the base. Water falling on the limestone will percolate through the limestone until the floor is reached at 28 metres aod and flow in an east south east direction through the quarry towards area 3 and then 7. Once area 6 is worked the site will be filled up with engineering fill and any water ponding on the less permeable material will flow towards the east side face of area 6 and flow east to the existing quarry. Once area 6 is filled in the subsoil and topsoil will be re-spread over the area and the field recreated including the drainage pattern. Currently the rainwater

soaks into the soil and the flows north east to the edge of the valley. Water from the west side of the site will be controlled within the existing quarry with a sump on top of the marl bed to store water for the dust suppression and the wash plant.

8.1.18 Area 7 will be worked in an easterly extension to area 8 and was only 80 metres wide and 250 metres long. Water falling on the site will flow to the east and into the face to flow under the field to the east in the limestone in area 8. The water will flow to the face as it is advanced down dip to the eastern boundary. The surface contours fall from 56 metres aod to 45 metres aod. The limestone beds dip east so it is expected that the direction of flow will be slightly east northeast where the River Went is at a level of 16 metres aod. On completion of working 8 1C the slope will have a drainage channel to allow water to flow through the drainage medium to the limestone and continue flowing through the joint sets. Once the face is filled against the water flow will be through drainage channels in the slope and small ephemeral pond will collect water flow in the base of the quarry.

8.1.19 From the available data there is no water flow north to the River Went that will affect the flow or the flood risk on lower lying land upstream of the quarry. In times of heavy rains the river is susceptible to water runoff from land in the exposed coalfield to the west and the meadows in the valley of Brockadale Plantation act as flood attenuation. Land to the west in the fields along the River also floods and acts as flood storage.

8.1.20 The extension to the quarry poses no risk of flooding to the area and will not affect the response of the River Went. The water falling on the field at present percolates through the topsoil and the subsoil into the limestone and this is evident from the fissures and vugs that have been filled with loamy soil from erosion of the soil into the joints and fissures.

8.1.21 The water then flows through the limestone to the base where it meets the red marl and flows east north east to the outcrop of the limestone bed in the valley side.

9.0 Ground Conditions

9.1 Introduction

9.1.1 This chapter assesses the ground conditions at the site and the impacts associated with quarrying of limestone. The excavations are regulated by the Quarries Inspectorate of the HSE and they have been contacted as part of the scoping opinion procedure by North Yorkshire County Council for area 5, 6 and 7 and there have been discussions with the Quarry Inspector regarding the face heights and placing limestone fines against the face as a temporary measure until the inert waste is brought in to build the buttress against the face in November 2018. As the limestone fines are used to buttress the face and create a no go area for potential rock fall until the permanent buttress is constructed in inert waste and covered with limestone fines from the stockpiles of fines against the face then the Quarries Inspector is content with the scheme to work the face the full depth of the limestone from 55 metres aod to 20 metres aod on the east side of the site

9.1.2 The aim of this assessment is to determine whether the proposed design of the quarry, future plans for the quarry, industrial estate and the restoration of the site accord with the Quarry Regulations 1999 and the guidance given in paragraph 33 of the NPPF Planning Practice Guidance on slope stability.

9.1.3 This chapter describes the policy context, input data and methods used to assess the development. It reviews the baseline site conditions and assesses the potential impacts of the development taking into account the measures which have been adopted to prevent, reduce, mitigate or offset the identified impacts of the previous site history and the underground coal mining.

9.1.4 Potential impact on development is likely to relate primarily to existing use of the site as a quarry from which empirical data can be obtained of the structure of the beds, the consistency of the geology, the joint set orientation and bedding plane angles. The depth of topsoil and subsoil, beds of limestone and an assessment of mining waste, any discontinuities in the limestone, fissures and vugs, the restoration of the site with infill from the mining waste and residue from the inert waste processed at the waste treatment centre granted under EPR number BB3203CN and EPR number DP3498LM.

9.1.5 The quarry site is approximately with area 8 is 49 acres in area and is located approximately 8 km to the south of Pontefract. The northern boundary is formed by Brockadale Plantation, the south side by Went Edge road and to the west is a field that is used for cereal growing. The field to the east which is area 8 will allow the full depth of limestone to be worked and an assessment of the face in area 7 has been undertaken together with the face in the south side along areas 3, 4 and 5 to check on the condition of the limestone beds adjacent to the standoff for Went Edge Road. Further limestone areas will be exposed and worked to the base of the Permian limestone and these have been assessed based on the observations in the quarry in the area 4, area 3 and the face in area 7 running north to south. The quarry is to be extended by 22 acres, 8.6 hectares

but there will be areas that are restored in the quarry such as area 5, 4 and 3 where no further extraction will take place so the operational area where faces will be 35 metres deep is over a distance of 200 metres at any one time. The slopes will be 75 metres wide so the face lengths will be covered with engineered fill and covered with limestone fines. The exposed face area in the quarry is unlikely to exceed 3.3 hectares at any one time.

9.1.6 The River Went is located approximately 300m to the north of the site and principal source of flood risk along its course. The watercourse is considered as a tertiary watercourse by the Environment Agency (EA). It is the primary receptor that has the potential to be impacted by the proposed development and existing quarry from water falling within from rainfall on the site. The impacts to this watercourse have been considered within the hydrogeological assessment in chapter 8. There will be an area of limestone left in place between the quarry design for phases 8A to 8C1 along the valley side and with a 10 metres wide standoff on the north side of the application area to protect the woodland in Brockadale Plantation.

9.1.7 Ground contamination, or the possibility of it, is a material consideration for town and country planning, and thus it must be considered in any planning application. This is set out in the Planning Practice Guidance and the NPPF in paragraphs 178 and 179. published by the Department for Communities and Local Government (DCLG).

9.1.8 The assessment of the conditions of the site considers published information relating to the solid geology of the area, the sites historical use as Smeaton Limeworks and previous intrusive site investigations. The area where quarrying is to take place is in agricultural use so there has been no contamination on the site. The industrial area has been remediated, the hard concrete and brickwork recycled as secondary aggregate and the new location of the industrial estate is in the base of the quarry that had no previous use as land.

9.1.9 This report has been prepared by John Carlon. (B.Eng Hons) Mining Engineering, C.Eng C.Env MIMMM MRICS MCIWM MIQ of Cromwell Mining Consultants who has over 30 years experience in quarrying, contaminated land and geotechnical engineering. Specialist independent advice has been requested from Key Geo Solutions in June 2015 on the factor of safety on the face adjacent to the southern boundary and within 30 metres of the road known as Went Edge Road.

9.1.10 The quarry will be worked within 30 metres of the boundary with Went Edge Road and the face is to be 36 metres deep and worked to a sub vertical joint set. The standoff from the black top on the B6474 is 33 metres so the angle of draw is 45 degrees. The face is safe in the medium term but there is a risk of slumping in the top 3 metres of soft limestone and of rockfall where there are columns of limestone with fissures or dilated joint sets on either side.

9.1.11 The applicant commissioned some geotechnical modelling of the face and the support through a buttress of inert material and covered with limestone fines from Key Geo Solutions and the report is included in appendix 6. The conclusion from that site visit and modelling is the limestone can be worked to within 30 metres of the road side boundary

but the face and should be safe in the medium term which has been taken to be between 5 and 10 years considering the open face in the quarry that have been exposed that length of time. The face on the south side should be supported with material in the longer term to cover the faces and prevent rock fall or migration back in the upper beds. Refer to plan number 5 to 7 in appendix 2.

9.1.12 The geotechnical assessments and the condition of the faces when left open have been considered for the future working of the site and the gradual restoration of the exposed faces on the south side of areas 3, 4, 5 and 6 as quarrying extends into the extension east from area 7. Using limestone fines as temporary cover over the faces and providing a zone of safe support if there is any rock fall from the face will mean that the face in any part of the quarry will stand for the short time it is exposed between working and the storage of limestone fines and the permanent placement of inert waste fines as engineered fill covered with limestone soil. Faces on the north side and east side have stood for over 10 years in the quarry area so the operator is confident that there will be no failure as long as the rock fall risk is reduced at the toe of the face is marked out with a 15 metre no go zone when there is no working.

9.1.13 Area 6 on the west side of the quarry will be worked over a period of 2 years and backfilled with inert waste and capped with quarry fines once the quarry has been worked the full depth with a 22 metre high face. The face in area 8 will be worked to the same depth as area 7 as shown on plan number 4 (WEQ/AR08/PA-04) and the the cross section on plan number 11. The face will remain stable over the period of time it is open until fill is placed in the bottom and brought up in layers to the surface. It is unlikely there will be any appreciable settlement due to the method of backfill and the fill being within limestone strata left after working the areas within the quarry and the backfill is confined within undisturbed strata.

9.2 Legislation and Planning Context

9.2.1 A detailed review of the development plan documents and planning context in relation to the development proposals is provided in Chapter 3.

9.2.2 This section summarises those policies that are directly relevant to contaminated land, quarrying and remediation issues.

National Policy & Legislation

National Planning Policy Framework Paragraph 170(f) and 178

9.2.3 This document states that Local Planning Authorities “LPAs” or MPA’s in this case must be satisfied that planning permission can be granted on land use grounds taking full account of environmental impacts. Responsibility for the safe development of the sit rests with the developer and landowner.

- The relevant pollution control authority in the case the Environmental Health Officer at Selby Council is satisfied that potential releases can be adequately regulated under the Pollution Control Framework and robust planning conditions.

- The effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution, when the proposed development is added would make that development unacceptable.

The site has been inspected and the historical maps and records considered and it is clear the area 8 extension is within the agricultural field east of the existing quarry and the land is not contaminated from a previous use. The agricultural land classification survey and trial bores have proved there is no made ground on the field.

NPPF and Planning Practice Guidance – Development and Flood

9.2.4 The Planning Practice Guidance and information from the Environment Agency's website is continually updated, explaining how flood risk should be considered at all stages of the planning and development process, in order to reduce future damage to property and loss of life. The planning system should ensure that new development is safe and not exposed unnecessarily to flooding by considering flood risk on a catchment-wide basis and, where necessary, across administrative boundaries. The guidance also outlines how flood risk issues should be addressed in planning guidance, development plans and in the consideration of planning applications.

The site is an active quarry and has been worked since 1947 with an increase in output since 1993. The quarry is worked dry and the water table is some 6 to 8 metres below the surface in the Coal Measures geology known as the Ackworth Rock. The rainfall falling on the quarry percolates thought the limestone beneath the floor and flows through the joints, fissures and vugs away from the site. Downward flow will be arrested by the underlying bed of red marl and mudstone.

Whilst the Permian Limestone is considered a major aquifer this part of the Permian exposure is on the outcrop and there are no water resources in the rock within 1 kilometres of the site. Selby Council have no records of water supplies being drawn from the Permian Limestone in this area. The groundwater protection map for the area shows a resource at Great Heck some 10 kilometres east of the quarry.

The site is not at risk from flooding and due to the exposed area of the quarry and the storage in the limestone for rainfall the water seeps to the bank of the River Went in the Brockadale Plantation and provide a damp environment in the valley where the River Went flows east.

The quarry will not increase the flood risk of the area and the river will not flood the quarry. Considering the pathway through the limestone to the marl bed and the current operation where the floor of the quarry is covered in limestone clay dust that has filled in any joints and fissures the current operation and extension will pose a negligible risk to the watercourse and groundwater, as borne out by the evidence of the quality of the river

since 2000 to the present day which has improved since the coal mines closed at the source of the River Went.

Land Drainage Act and Water Resources Act

9.2.5 In addition to consideration in the context of the national planning policy, the application will be considered by the Environment Agency (EA) under the Land Drainage Act (1991) and the Water Resources Act (1991). Consent from the EA is required for any proposed discharges to Controlled Waters. Consent would also be required for any development within 8m of a designated main river under the EA's Land Drainage Byelaws.

9.2.6 There is to be no discharge of water from operations on the site and it is not located within 8 metres of a main river. The Area 8 application site is 70 metres from the River Went.

Town and Country Planning Act 1990

9.2.7 The Environment Agency will seek to ensure that Planning Permission contains conditions designed to protect water resources and contamination of land through planning obligations with developers and Mineral Planning Authorities. The Environment Agency is fully aware of the site due to the permits for waste treatment on site and they have commented on the proposal in the scoping opinions for previous extensions to the quarry. Robust planning conditions for the existing quarry provide protection of the environment and groundwater.

The Environment Agency has noted that the site is on (or in) a principle aquifer and that there are no Source Protection Zones and no licensed abstraction licences within 1 kilometre of the site.

Local Policy

Selby Council

9.2.8 Selby Council have provided an advice note on what is required for land that is suspected of being contaminated or had a contaminative use.

9.2.9 The application site has been investigated from the historical maps and topographical surveys of the quarry and the extension to the site is in the arable field to the east of the existing quarry and industrial estate. The area being applied for has had no contaminative use in the past and has been used as farmland for over 150 years and from the archaeological desk top investigation included in appendix 9 probably back to Bronze Age times.

9.2.10 No further work has been undertaken on the contamination risk assessment in areas 5, 6 & 7 or 8 as the land is considered to be a very low risk which has been confirmed in the Agricultural Land Classification Report in appendix 10. The soils that will be removed have been used for cereal production for over 150 years and once stripped the limestone beneath the soil that will be extracted and processed is not contaminated. The industrial estate when it was at the surface within the IDO ROMP area was assessed and then

remediated before the limestone was removed beneath the former industrial estate land edged brown on plan number 2.

The environmental policies from the Council can be summarised as follows;

- All new development will minimise or avoid air, noise, water, land and light pollution.

  The quarry does not work beyond the hours of darkness and lights on machines are used in the base of the quarry and infrequently at the surface. There is no lighting used for the operation other than the lights on the plant and the wash plant. The plant is located in the base of the quarry so there is no light pollution in the general area.

- Regard will be given to the individual and cumulative impact of potentially polluting development in considering whether it would have an unacceptable effect on the environment.

The quarry will not be a polluting development as the mineral is naturally occurring and there is no risk to the watercourse, the River Went. Noise and dust emission are discussed in sections 6 and 7.

9.3 Assessment Methodology

Contaminated Land Relevant Guidance

9.3.1 As a matter of best practice, this assessment has been undertaken based on the following relevant guidance on contaminated land which includes:

- National Planning Policy Framework: Development on Unstable Land Paragraphs 178 to 183.
- Planning Practice Guidance for the NPPF, paragraph number .
- Planning Practice Guidance for the NPPF, Development and Flood Risk.
- Contaminated Land Exposure Assessment Model (CLEA)
- Environmental Impact Assessment, A Guide to Procedures, DETR, 2000.
- BS 10175 (2011) Investigation of Contaminated Sites – Code of Practice.

CONSULTATIONS

9.3.2 As detailed in Chapter 1, a formal scoping exercise was undertaken for areas 4 and 5 to inform the applicant of the scope of the Environmental Assessment should cover in assessing the impacts for extensions to the site. The formal Scoping response from the Council is dated the 21st March 2016 for area 5 and is included at Appendix 1.4. The

exercise did not highlight any issues relevant to contamination and ground conditions however the matter has been addressed as part of the Assessment in accordance with the NPPF.

Methodology

Desk Study

9.3.3 A number of site information sources were consulted to assess the previous use.

- 1854 Geological Plan.
- Archaeological report prepared for Area 8 –MAP Archaeological Consultancy.
- Historical Maps
- Geology of the Yorkshire Coal Fields.

Fieldwork

A site walkover was undertaken on the quarry and industrial estate on 18th August 2012 and 24th June 2015 for the area 4 application and in the autumn of 2015 to inspect area 5 and the industrial estate before the planning permission was granted for Area 4. The contamination was assessed from the previous uses and as the area in the base of the quarry was widened out on the north side of the industrial estate the concrete and mortar plants were relocated. The industrial estate was then worked east to west taking off a block of limestone after the made ground which consisted of brick and concrete had been sampled and assessed whether it could be processed as secondary aggregate or had to leave site to an authorised waste management operation. The material was inert or slightly contaminated below the threshold levels for industrial use so it was processed and used for secondary aggregate. Photographs of the site from 2015 to 2017 were taken on site visits to monitor the relocation of the businesses as quarrying progressed to widen the floor of the quarry are included in appendix 3.

Historical Site Investigations

9.3.4 A previous intrusive site investigation to assess the reserves of the quarry has been undertaken by Ennstone Breedon on 2003 and by T&T aggregates in 2000 to obtain water levels and the depth of the limestone from the surface. The limestone faces have been mapped in 2003, 2005 and March 2014 to ensure continuity in the limestone deposit and the consistency of the geology.

9.3.5 The potential and residual impacts have been assessed using the following terminology:

- Neutral No contamination
- Minor not noteworthy or material

- Moderate noteworthy and material
- Major extremely noteworthy and material requires further assessment as to risk of pollution
- Substantial Remediation required after detailed site investigation.

Cumulative Impacts

9.3.6 The proposed new development in area 8 has not identified any contamination or risk of pollution through reactivation that has the potential to impact cumulatively with the existing quarry and the industrial estate. The site is a field which is in arable use and has been for over 100 years.

9.4 Methodology for the Archaeology Survey

Desk Study

9.4.1 The contaminated and geotechnical site conditions have been determined from investigations of all the published data relating to the former land use, the topography, geology, and hydrology of the area. Much of the information was obtained from details of the quarry and the working life of the site since 1947 when planning permission was granted (or renewed) for the works to extract limestone. The planning agent and mining engineer have been involved with the site since 2002 so a thorough knowledge of the site has been gained.

Fieldwork

9.4.2 Site walkovers were undertaken to ascertain the current site conditions. The assessment has been undertaken by three of the consultants advising the applicant. The agent Cromwell Mining Consultants, have considered the land, the geotechnical stability and the current and former use, the agricultural advisor Land and Restoration Management Limited has considered the ability of the soil to grow arable food and MRB Ecology have considered the health of the flora and the biodiversity in the field and the wider site for area 7 and 8 with the restoration concept and habitat creation. The inspections of area 5, 7 and 8 by the various consultants together with the published data available leads to the conclusion the land is not contaminated.

9.4.3 Cromwell Mining Consultants (CMC) have considered the contamination and site condition of the fields for areas 5, 6 and 7 and the industrial estate in the past, the soil thickness and the limestone deposit in area 8, LRM have excavated trial pits in the soil for the ALC in area 8 in the field to the east and considered the soil from a contamination

issue and MRB have looked at the vegetation on the field, the boundary with the quarry and in the SSSI. CMC have reviewed all the historical information, the site walkovers, the excavation in the IDO industrial area, Area 2 and the past workings in the quarry and found that there has been some made ground in the industrial estate but elsewhere the land is uncontaminated and has been in agricultural use. The industrial site was remediated by dismantling the buildings and then removing the concrete yards and hard core beneath down to rock head. The material was sampled for potential contaminants such as heavy metals, TPH and PAH, phenols and asbestos and found to be inert so it could be crushed, screened and prepared for secondary aggregate.

9.5 Baseline Conditions

Existing Site

9.5.1 The application site has been grade 2 agricultural land sloping gently to the north east, refer to plan number 4 from the existing Area 7 extension and is currently used for arable crops. The field has been used for arable farming for over 150 years and there has been deep ploughing and cultivation of the soil over that period of time. Areas 3 and 7 had also been used for cereal crops and have been cultivated up to the autumn of 2015 by large heavy agricultural machinery.

9.5.2 The proposed limestone extraction area of 8.6 hectares will require the soils to be removed and placed in stack for future use in the restoration of the site. If there is an excess of topsoil from working area 8 then the soil will be sold for the remediation of other sites that have been used for industry and require topsoil to rehabilitate areas of green space or gardens. The current use as agriculture has not contaminated the site and there are no areas of the site that require remediation before the development commences.

9.5.3 From information gathered from the geological maps and the Ordnance Survey publications that have been reproduced in the Archaeological report the land has always been field enclosures since it was enclosed over 150 years ago. Trial trenches have been excavated in the adjacent fields which is area 3 and 7 to investigate the field boundaries and anomalies that existed. The MAP archaeological report in appendix 9 recommends a geophysical survey and trial trenching to assess the field boundaries and enclosures for record purposes after planning permission is granted. The field was a number of small strip fields before the field was one large size due to the common practice of removing hedges in the 1970's as farm machinery became larger and required longer runs and room. The hedgerows appear to have been pulled out prior to the 1970's when there was a move to larger fields as bigger machinery became available.

9.5.4 To the west is the industrial estate now in the base of the quarry that was the former Smeaton Lime Works that had been was sited there due to the reserve of limestone that was available near to the outcrop and escarpment and could be served by a mineral railway.

9.5.5 Site investigation has comprised of trial pits and boreholes in the current quarrying area

down to the base of the limestone and to assess the soils in the land area of the whole quarry for design purposes and at no time has contamination being evident on the site.

9.5.6 The site walkover of the field identified that the majority of the land is arable with no areas of standing water. Underneath the site is soil between 0.3 metres and 0.5 metres thick where the soil has been removed and placed in a bund to the east of area 7 to form a boundary with the field and area 8. Beneath the soil is the natural geology which consists of 30 metres of Permian magnesium limestone and beneath that marl lying on the coal measures mudstone and sandstone. Seams of coal that exist at depth have been worked in the past the last being 2002 by underground long wall mining from Pontefract Prince of Wales Colliery.

9.5.7 A baseline assessment of the quarry has concluded that the site has been used for a lime works from 1938 to the 1950s and as an industrial estate until the present day. Smeaton Lime works tipped material out of the works into the areas of lower lying land to bring the land to a level all over the site. It is presumed the lime works had kilns to burn lime from the quarry and the ash and lime would have been tipped out to form a yard for stock and to expand the works. All evidence of the former lime works and industrial estate on the surface has been removed.

9.5.8 This industrial activity did not extend to the field areas that have been worked and this is borne out by the ALC and the archaeological surveys. The field area which is to be developed as Area 8 of the extension to the quarry has been in agricultural use since the Bronze Age and is not contaminated.

Site Conditions

Introduction

9.5.8 The British Geological Survey and the Environment Agency classifies the Permian strata as a 'suitable as a principle aquifer'. These comprise a succession of

'fractured or potentially fractured rocks, which have a high primary permeability enabling the storage and flow of water.

9.5.9 The Environment Agency have designated that the limestone can be a principle aquifer as it is Permian Limestone but are aware from their records that there are no known sources of water abstraction within 1 kilometre of the quarry.

9.6 Geological Succession

Superficial Deposits

9.6.1 A previous site investigation programme undertaken by LRM on behalf of the applicant included augered boreholes in the soil in the area 8 field and the results from this intrusive investigation has been used to identify the soil thickness above the above the natural limestone strata varies from 0.28 m to 0.4 metres of soil. The survey has been extended from area 5 and 7 into the field to the east to assess the best and most versatile land. No other superficial deposits exist on the application site and underneath the soil is limestone. The ALC reports are in appendix 10.

9.6.2 The industrial estate to the north side of the quarry is now on 6 metres of limestone bed rock. The industrial estate is on uncontaminated land prepared after quarrying ceased and the wash plant was relocated.

9.6.3 The application site and other part of the quarry shown on plan number 4 have been in agricultural use and therefore present no risk to the environment.

Bedrock Strata

9.6.4 The site lies within the Permian Dolomotised Limestone with a marl base that lies un-conformably on top of the Pennine middle coal measures strata of Westphalian age. The strata that the quarry is located in consisted of three distinct beds of limestone separated by thin bands of clay < 200 mm so that the limestone beds near to the surface are 3.5 metres thick and the two lower beds are 15 metres thick, providing a full depth of 33.5 metres of limestone. The underside of the limestone deposit is red marl which is 3 metres thick and beneath this Basal Permian Sand which is 3 metres thick over marl over coal measures argillaceous mudstone for a depth of 4 metres. Beneath the mudstone is a bed of sandstone which is the Ackworth Rock.

9.6.5 The recorded dip of the strata is at an angle of 5-7º in an easterly direction and has been proved to a depth of 400 metres below the surface due to coal mining in the area from Kellingley colliery.

9.6.6 Groundwater flow in the sandstone bedrock is controlled by fractures due to the very low intrinsic permeability of the constituent rock types. The mass coefficient of permeability will probably fall within the range of $1X10^{-7}$ to $1X10^{-9}$ m/s but could be lower specifically in the clay and shale horizons.

9.6.7 Conversely downward groundwater flow may be impeded in the coal measures and it is not thought the hydraulic conductivity will be higher where mining subsidence has occurred due to the depth of the seams from the surface and type of mining.

Groundwater levels

9.6.8 Information from the boreholes that had been logged on the west side of the quarry confirm that the water table is at 14 metres aod which is 12 metres below the current floor level and 6 metres below the horizon of the base of the Permian strata.

Groundwater quality

9.6.9 There is no information on the quality of the ground water in the coal measures strata. However, quality is likely to be very variable depending on the source of the water. The limestone strata are dry and the groundwater table is protected by impermeable marl and argillaceous mudstone. Water falling on the quarry will flow east southeast down the gradual dip of the strata but in general the water ponds on site until it evaporates in periods of dry weather.

Potential Sources of Contamination

9.6.10 The site is located in an area that has been the subject agriculture for over 150 years and there is no contamination on the site. There are no contaminative sources on the Area 7 site as the site has been excavated for the archaeological dig and no other use was found in the topsoil or subsoil other than farming. The desk top archaeological report prepared by MAP in July 2018 provides information on the potential for interest and recommends a geophysical survey and trial trenches. A WSI is included in appendix 10.

9.6.11 There will need to be some intrusive site investigation to assess the potential for archaeological finds and the ALC has found soil and subsoil so there is no risk from contamination on the application site.

9.7 Contamination Conceptual Model

9.7.1 The risk assessment approach is based on the source – pathway - receptor approach and is based on the quantification of the contamination and the pathway in which it can migrate away from the site to the receptor that being the water course in Brockadale Plantation and dust emissions to the surrounding site.

9.7.2 A site investigation record of the quarry has revealed that the beds of strata dip slightly to the east northeast at 6 degrees and the site is dry. As the site is worked and the limestone processed the fines fill the joint sets and fissures in the floor and the limestone dust when damp and compacted can be relatively impermeable.

9.7.3 The groundwater is below the site in the Ackworth Rock and the pathway from the quarry to the sandstone is severed by the red marl and the grey mudstone beneath the site. Water falling on the quarry could flow through the limestone north east to the River Went but the sides of the worked out quarry are tipped against with limestone fines.

9.7.4 The rain water falling on site usually soaks in to the fines and stockpiles of mineral on site or ponds in the floor of the quarry and keeps dust down until there are periods of dry weather when the rainwater evaporates away.

9.7.5 Monitoring and surveys of the plantation and the River Went have been undertaken for over forty years and the conclusion of the reports is that the quarry has no detrimental impact on the habitat found in Brockadale Plantation and is likely to be adding to the bio diversity due to the screen bunds and soil mounds and unmanaged peripheral land where ruderals can grow.

9.7.6 Area 8 is uncontaminated natural ground and as it is worked for limestone and backfilled to restore there is a potential for pollutants and quarry water to flow through joints and fissures to the River Went from the quarry down dip of the site or to flow further to the aquifer which is estimated to be at least 5 kilometres away to the east. Groundwater dies exist in the limestone beds around Knottingley and out towards Heck and Womersley Quarry had filled with water. The quarry working from 2006 when the limestone beds at 20 metres aod were worked in the ROMP area has not caused any environmental pollution of the groundwater or the river. There are robust management procedures in place to reduce the risk of pollution from the plant and machinery on site.

9.8 Contamination Risk Assessment

9.8.1 The application site is agricultural land. The use could not have introduced contamination on to the Area 8 site or the fields now forming areas 6 and 7. There is likely to be some risk of contamination due to the use of tarmac and bitumen products in the industrial estate for the new roads and yards but this is no more than what is in everyday use for the public highways and car parks. The industrial estate will not be disturbed in this proposal so there is no risk of reactivating any pollution on site.

9.8.2 The site geology, mining activity and the land uses have been investigated and this exercise has provided information to assess the risk of extending the quarry site could have on the surface water course in the Went Valley

9.8.3 The conclusion of the environmental risk assessment is there is no risk to the water course, the habitat or the workers at the quarry or industrial estate from the extraction of minerals in Area 7 or the future extraction of limestone in area 8.

9.9 Geotechnical Assessment

9.9.1 The quarry is inspected regularly under the Quarries Regulations namely numbers 16 and 30 to 38 to ensure there is a safe working environment and to assess the ongoing stability of the faces and whether there needs to be a rock fall zone set out after working in that area is complete until material can be brought in to provide a zone.

9.9.2 The faces are sub vertical back to the joint sets in the limestone to a depth of 36 metres below the surface. The faces are blasted in one and the stone is worked off the top of the blast pile and at the same time the face is cleaned down. Once the limit of extraction is reached as is the case on the north side then the limestone fines are stored against the face to prevent rock fall and support the columns in the limestone after the face has been scaled and cleaned down.

9.9.3 The limestone fines are stock for the wash plant or will be used as soil cover for the restoration scheme. The faces will stand in area 5 and 7 for the medium term and it is proposed to tip selected inert material against the faces in the quarry to cover them over and to achieve a sloped down restoration profile. The replacement of limestone with tipping is shown on plan number 5 to 7. The scheme for buttressing the faces in the long term also allows the maximum amount of limestone to be extracted. No benches are required in the face to arrest rock fall or to prevent toppling failure as material can be placed against the face to prevent that.

9.9.4 Due to the beds of stone being relatively level and the joint sets being variable in relation to width and structure then there are areas where there are dilated joints, fissures and thin columns of stone that are exposed when the faces are cleaned down. The operator is using limestone fines at the present time until a permit is issued to deposit the fines waste from the recycling centre at the site. This material will be engineered in from the base to the top as a buttress and covered with fines.

9.9.5 The slopes and restoration scheme has been designed based on the expected volumes of limestone waste and the inert material available. Key Geo Solutions have looked at the overall scheme for working area 5 and the face on the east side of the quarry in area 8 can be worked and can be cut in to 30 metres from the road boundary and then backfilled in the medium term with limestone fines to provide support for the face and prevent deterioration of the limestone beds and joints until inert waste is used as engineered fill for the permanent low level restoration.

9.9.6 There will be a medium factor of safety of 1.3 as the face is worked back to the limit of extraction proposed for the southern side of the quarry and a long term or perpetual factor of safety >1.5 when the slope is completed from the surface to the base of the quarry at 20 metres aod.

10.0 Ecology

10.1 This chapter assesses the ecological impact associated with the extension to the quarry to extract magnesium limestone and considers the impact the quarry has had on the habitat at Brockadale Plantation since 1993 when the quarry was working along the northern boundary of the site adjacent to the plantation.

10.1.1 The aim of this assessment is to determine whether the proposed extension to the east in the large field may affect the surface water drainage, flooding, water quality, air quality and vegetation of the site and surrounds, or whether these factors may be affected by the development. At Went Edge Quarry there has been surveys undertaken by independent bodies of the plantation for over 30 years. These surveys have noted the fauna and flora of the area and the habitat within the limestone crags and the river valley. The proximity of the quarry has been considered in these surveys and to date the conclusion of those surveys has been that the quarry is not affecting the SSSI and to some degree may enhance it by providing contrasting habitat. A phase 1 habitat plan is included in the technical document in appendix 7.

10.1.2 This chapter describes the policy context, input data and methods used to assess the development. It reviews the baseline water quality, air quality, disturbance from the quarry and industrial estate due to the working hours, the noise emissions and contrasts that with the non-management of the surrounding quarry land, the habitat and the interaction with the plantation and the surrounding arable fields. Finally it assesses the potential impacts of the development taking into account the measures which have been adopted to prevent, reduce, mitigate or offset identified impacts due to land being taken for quarrying. A restoration concept is proposed worked up in conjunction with the Landscape Architect to provide a range of habitat in the quarry with exposed quarry faces, scree, slopes against the worked out faces and plateaus on the slope below the faces to provide damp undulations both north and south facing to provide a varied habitat on limestone soils.

10.1.3 Potential impacts are unlikely to relate to flood risk and controlled waters protection issues as these have been discussed in the earlier chapters 8 and 9 so the main possible impact is air quality and dust deposition on plant life that could affect the health of the trees and plants. As an initial assessment this is thought to be low risk due to the annual rainfall and the rain in the spring to autumn which tend to be regular and short heavy downpours that will wash off dust from the plants. The application site is approximately 22 acres, 9.7 hectares but the ecology survey has included the land surrounding the quarry in the arable fields, Sayles Woodland and Brockadale Plantation from earlier ecological reports for area 6 and 7 as part of planning application NY/2016/0185ENV.

10.1.4 The River Went is located approximately 70m to the north of the site in the SSSI and it represents the area of principle habitat. The watercourse is considered as a tertiary watercourse by the Environment Agency (EA). It is the primary receptor that has the potential to be impacted by the proposed development as the water quality has become better, from D to B over the past 10 years. The impacts to this watercourse have been

considered in the hydrology and contamination sections of the Statement and it is not considered here apart from where it can affect flora and fauna.

10.1.5 The loss of agricultural land is considered even though it is a mono culture of low ecological value it can present feeding areas for birds for a short period of time as the area 8 part of the field is stubble. The boundary alongside of the existing quarry has been considered as there is a soil bund from the level of the field to the level of the B6474 and it is planted with trees and shrubs.

10.1.6 The quarry offers a more diverse habitat on the boundaries and on unmanaged land as there are swathes of vegetation and thick cover for birds and mammals on the soil mounds and hedges. As agricultural land is taken for the limestone extraction restoration of the worked out areas of the quarry will be placed into restoration and aftercare as the slopes are completed and vegetation allowed to naturally regenerate and planting under the management scheme.

10.1.7 The assessment of the ecology of the site considers published information relating to the numerous surveys of the plantation and the River Went carried out for the upgrade of the A1 and by the Yorkshire Wildlife Trust as part of their work to form interconnecting habitat in Yorkshire and Humber.

10.1.8 The ecology report that this section has been taken from is dated January 2019 and the ecologist has used the information from the walkover from the previous report dated the 12th September 2016. The walkovers and assessments have been undertaken by Louise Hill of MRB Ecology a respected ecological consultancy based in Doncaster. The principal is Louise Hill who has over 15 years' experience in ecology work in the region. The report is included in the technical appendices section in appendix 7.

10.1.9 The ecology report has been prepared for public consultation on the effects the quarrying in area 8 could have on the local fauna and flora. The habitat does not seem to be affected by the quarrying activity as there has been no measurable change to the area apart from the reduction of arable farmland to a more varied habitat with hedgerows, tree planting, lime loving flora and an unkempt belt of land around the top of the quarry face.

10.1.10 MRB has been involved in the final restoration concept and have provided an addendum to the ecology report that has been received on the 27th September that discusses the edge protection on the crest of the faces cut in area 8 and the care taken to provide some buffer zone to the SSSI on the north side and the east.

10.1.11 The intricate mix of bare rock faces, pockets of trees and scrub, wooded slopes on the north facing side and limestone grassland will contribute to the targets in the Selby DC BAP and will provide shelter and habitat for priority invertebrates such as dingy skipper, bumblebees and rare moths.

10.2 Legislation and Planning Context

10.2.1 A detailed review of the development plan documents and planning context in relation to the development proposals is provided in Chapter 3.

10.2.2 This section summarises those policies that are directly relevant to water quality and ecology issues.

National Policy & Legislation

National Planning Policy Framework Chapter 15 Conserving and Enhancing the Natural Environment,

10.2.3 Paragraph 170 states that the planning system should contribute to and enhance the local environment by:

- Protecting and enhancing the valued landscapes , geological conservation interests and soils:
- Recognising the wider benefits of the ecosystem services.;
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt overall decline in biodiversity, including be establishing coherent ecological networks that are more resilient to current and future pressures;
- Preventing both new and existing development form contributing to or putting at risk at unacceptable levels from, or being adversely affected by unacceptable levels of soil, air, water and noise pollution or instability of land and
- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land.

10.2.4 The Mineral Planning Authority must be satisfied that planning permission can be granted on land use grounds taking full account of environmental impacts. To minimise impacts on biodiversity and geo diversity, planning policies should:

- plan for biodiversity at a landscape scale
- identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated site of importance;
- Promote the preservation, restoration and re-creation of priority habitats, ecological networks and protection of recovery species populations.

10.2.5 Paragraph 175(b) discusses when determining planning applications the MPA should aim to conserve and enhance bio diversity by applying the following principles:

- Proposed development on land within or outside a Site of Special Scientific Interest should not normally be permitted. Where an adverse effect on the site is notified special interest features is likely, an exception should only be made where the benefits of the development, at the site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSI's.

- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted.

- Opportunities to incorporate biodiversity in an around development s should be encouraged.

10.2.6 Paragraph 180 states - planning policies should prevent unacceptable risks from pollution and land instability and that the new development is appropriate in its location. The effects of the proposed development and any cumulative effects on health, community, general environment or amenity and sensitivity of the area from the development should be taken into account.

10.2.7 To some extent this will require close co-operation with the Environment Agency and/or the pollution control authority, and other relevant bodies such as Natural England and Yorkshire Wildlife Trust, to ensure that in the case of potentially polluting developments:

- The relevant pollution control authority is satisfied that potential releases can be adequately regulated under the Pollution Control Framework.

- The effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution, when the proposed development is added would make that development unacceptable.

10.2.8 Policies from North Yorkshire County Council have been considered namely policy 4/6A and 4/10 in relation to the protection of the habitat and the Selby Council policy ENV9.

10.2.9 The design of the quarry in area 8, the future quarry workings, the existing quarry and a final restoration concept have been considered based on discussions with the County Council in November 2014 and discussion held for areas 5, 6 & 7 when the enhancement of the area around the Brockadale SSSI and the long term plan to relocate the industrial estate in to the base of the quarry in the present footprint was discussed at County Hall in Northallerton and meetings at the quarry. Those objectives have been achieved and the quarry can begin a restoration programme along the southern face adjacent to the 30 metres wide standoff in areas 5, 4 and 3. Restoration can also take place in the north side of the quarry in area 7 and the existing ROMP area.

10.2.10 The ecology survey has undertaken a review of all the information available background data sources and an extended phase 1 habitat survey. The fauna was observed at the time of the phase 1 survey in August 2013 and the report has been updated in the summer of September 2015 for the area 5, 6 and 7 application with the report dated September 2016. The area 8 site has been considered in May 2018 with a walkover the field and in Brockadale Plantation at the same time as looking at the ecology for the new access road around Area 6. Additional information was sought from a mammal expert to inspect a series of burrows in the woodland after the visit by MRB Ecology. Whitcher Wildlife have prepared a report on mammals in the area of the application site. The site is located just to the south of Brockadale Site of Special Scientific Interest and the Yorkshire Wildlife Trust Nature Reserve and lies within an agricultural field pattern of large enclosures to maximise cereal crop and harvesting.

10.2.11 Consequently hedgerows have been removed and others have gaps in them. The ecology survey together with the landscape assessment have been an integral part of the restoration concept of the existing quarry and this extension into Area 8 is to enhance the surrounding habitat of the SSSI and remove some of the monoculture of the agricultural site includes planting up the hedges and improving the habitat in the quarry on the slopes adjacent to the SSSI.

10.2.12 The ecology survey has assessed the impact of the existing operation in Area 3, area 4, areas 5, 6 & 7 and now area 8 so a comprehensive picture has been built up of the ecology of the area since spring 2013 with measurement of the effects, if any, from the quarry and the ways of enhancing the habitat across the quarry to compliment the SSSI. The ecology has been monitored on the visits to the quarry since the earlier permission areas were granted that have been worked between June 2012 and July 2013 in the ROMP area adjacent to the plantation until south eastern extension in Area 3 was opened up in July 2013. Visits have been undertaken whilst soil stripping has taken place on land previously in use for agriculture. The whole site has been assessed from an ecological point of view including the changes in habitat since agricultural land was taken out of production for quarrying.

10.2.13 The area 8 is a cultivated field with a shelter belt tree plantation on the northern side of the application area and a field right to the boundary of the site adjacent to Went Edge Road. Within the quarry and on the soil storage areas the soil has re-vegetated on the periphery to screen areas 7, 3 and 4 from the west. The soil bund of topsoil and subsoil was relocated to the north of areas 5 and 7 and more soil has now been moved to the west side of area 6 adjacent to the new access road. There is replanted hedgerow all along Went Edge Road and a tree belt on the screen mound of topsoil adjacent to Went Edge Road from the existing access road to area 7 in the east, refer to plan number 4 with reference number WEQ/AR08/PA-04. The current field has limited habitat for nesting birds as it is either ploughed, growing crops or stubble and the area will be enhanced by the perimeter planting.

10.2.14 The ecology survey and assessment of earlier information from a wide range of sources mainly to assess the impact of the A1 and update surveys of the priority species in the

plantation has looked at the potential impacts of the extensions to the quarry on habitat in the area as well as on site.

10.2.15 The potential impacts have been considered;

- Physical habitat loss affecting a range of habitat
- Disturbance of protected fauna
- Effects of changes in air quality, water quality, noise, vibration, light emissions, air quality, in particular dust deposition.
- Changes in human activity at the quarry and industrial estate
- Fragmentation of habitat and obstacles to movement of animals
- Changes of soil conditions and introduction of new species and habitat.

10.2.16 Collection of data from the site and the earlier information from a wide range of surveys in the SSSI have provided the concept to mitigate the loss of agricultural land with the additional planting along the southern boundary of the site.

10.3 Scope of the Assessment

Ecology Relevant Guidance

In producing this assessment, reference is made to the Institute of Ecology and Environmental Management's (IEEM) Guidelines for Ecological Impact Assessment in the United Kingdom (2006). These guidelines went through extensive consultation and have been approved by a large range of environmental organisations and government agencies/departments. These guidelines have become a standard point of reference for Ecological Impact Assessment methodologies. They can be viewed online at www.ieem.org.uk/ecia.

10.3.1 This EcIA determines which ecological features or resources (receptors) within the zone of influence of the proposed development are both of sufficient value to be included in the assessment and likely to be vulnerable to significant impacts arising from the project.

The value or potential value of a receptor is determined within a defined geographical context. The following frame of reference recommended by IEEM is used:

- International;

- UK;
- National (i.e. England/Northern Ireland/Scotland/Wales);
- Regional;
- County (or Metropolitan - e.g. in London);
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and
- Within zone of influence only (which might be the project site or a larger area).

10.3.2 To help evaluate the baseline, the local area (e.g. county or region) may also have a range of relevant reference material describing the status of sites and species in the area. For the application site the specific documents used in this assessment include:

- Landscape Area 30 – Southern Magnesium Limestone
- Selby Local Biodiversity Action Plan 2004.

10.3.3 Although omitted from the 2006 guidance, IEEM produced Box 3.3 in earlier versions. This gives a good illustration of how ecological receptors may be valued in a geographical context and is retained in this assessment as a helpful point of reference for the value judgments made later in the report and is reproduced below.

Table 10.1 IEEM's former Box 3.3 - approach to valuing ecological receptors

International	An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population of any internationally important species. Also a regularly occurring and nationally significant number of an internationally important species during a critical phase of its life cycle.
National	A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation (e.g. SSSI selection guidelines). A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of a nationally important species which is

	threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant population of any nationally important species. Also a regularly occurring and regionally or county significant number of a nationally important species during a critical phase of its life cycle.
Regional	Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole; Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile; Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation; A regularly occurring, locally significant number of a regionally important species during a critical phase of its life cycle; Sites which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.
County	Semi-natural ancient woodland greater than 0.25 ha; County/Metropolitan sites and other sites which meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County / metropolitan; A viable area of habitat identified in County BAP; Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation; A regularly occurring, locally significant number of a County/Metropolitan important species during a critical phase of its life cycle.
District	Semi-natural ancient woodland smaller than 0.25 ha; Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile; Local Nature Reserves selected on District/ Borough criteria Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource; A diverse and/ or ecologically valuable hedgerow network; A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation; A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.
Parish	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. Local Nature Reserves selected on Parish criteria.

N.B Where species or habitats occur in more than one category above, the highest value is applicable.

Impact prediction

10.3.4 Impacts are considered at all stages of the project from preparation to quarry operation, backfilling the slopes with engineered fill and de-commissioning and restoration of the site outside the designated industrial area, reflecting the fact that developments can have short term and long term impacts on the ecological receptors.

10.3.5 Impacts on receptors are identified with relation to the following parameters:

- magnitude (‘size' or 'amount' of an impact);
- extent (area covered by impact);
- duration (how long a receptor will be impacted);
- reversibility; and
- timing and frequency.

10.3.6 This system follows guidelines issued by the Institute of Ecology and Environmental Management and is applied appropriately to the impacts related to this application. Parameters are highlighted where they have a bearing on the particular impact assessed. Where possible it is useful to use quantitative measures for these parameters – however in practice this may not be possible and a more descriptive terminology is required, terms used in this assessment are summarised below.

10.3.7 Impact Assessment

Table 10.2: Terminology relating to impact prediction

Parameter	Terms	Definition
Magnitude / Extent	Large Scale	An impact which will affect populations or habitats occupying an area larger than the application site.
	Medium Scale	An impact confined to the application but which will affect most of (over 50% of the site or population within the site).
	Small Scale	An impact which will affect discrete areas of the site or less than 25% of a population within the site.
Duration	Short term	Only present during certain stages of development (for instance site clearance)
	Medium Term	Present during the construction phase of

	Long Term	the site. Persisting on the site post development into operation and beyond.
Reversibility	Reversible Non-Reversible	Impacts which can be redressed or from which recovery is possible. Impacts which cannot reasonably be redressed or from which recovery is not possible.
Timing / Frequency		Sometimes the specific timing of an event or the fact that it will be repeated determines it significance, e.g. repeated disturbance of some species may lead to their loss while a single disturbance event would have no effect. If appropriate specific reference will be made to this.
Confidence	Certain Probable Unlikely	Terms refer to the probability of an impact at a particular site, this can depend on a variety of factors e.g. the likelihood that soil stripping will lead to siltation of water courses is dependent on factors such as climate, topography, timing, soil type.

10.3.8 Consideration of these parameters and their effects on specific receptors is carried out within the relevant sections of both the main text and the technical appendices. This consideration is summarised in table 10.2, where the ecologist's assessment of the above parameters is measured against the receptors assessed value to establish the impact's significance in its unmitigated and mitigated forms.

Mitigation

10.3.9 The avoidance, reduction, compensation and mitigation of predicted effects are an integral part of project design. The measures proposed to mitigate the potential impacts are outlined within this assessment.

Consultations

10.3.10 As detailed in Chapter 1, a formal scoping exercise for area 5, 6 and 7 with the quarry area has been undertaken to inform the applicant of the scope of an Environmental Assessment and it includes all of the earlier quarry workings and surrounding area. The formal Scoping Response from NYCC is included at Appendix 1.4 and the consultation responses for the planning permission NY 2016/0185/ENV has informed the agent of the requirement for an ES. The exercise highlighted the following issues relevant to ecology

discussed in their response from Natural England for the proposal to extend the quarry into areas 5, 6 and 7. The same issues will be raised from the application to extend into the field to the east to be known as area 8 so the planning agent has scoped the proposal for issues that need to be addressed in the ES. The points raised for the previous applications have been considered by the ecologist in the technical report and in this Statement and all the points have been addressed, after the discussions with the County Ecologist for the quarry and the concept plan for the whole of the site considered in the Scoping Opinion from NYCC for area 5, 6 and 7 and the global restoration of the site.

- Internationally and Nationally Designated Sites,
- Site of Special Scientific Interest at Brockadale Plantation,
- Regionally ad Locally Important Sites,
- Protected Species
- Habitats and Species of Principal Importance.
- The need for an assessment of the baseline ecological conditions at the site, including information on water quality, existing groundwater quality, flora and fauna, site habitats and the proposed extension and impact.

Methodology

Desk Study

10.3.11 A number of site information sources were consulted to develop the extended phase 1 habitat survey and an understanding of the site to inform the design of the quarry and mitigate or nullify the impact on the local area. These comprised both published ecological reports and unpublished historical survey reports as follows: -

- 1854 Geological Plan.
- Plans of the quarry as working has progressed from 1990 to 2010 on the north side adjacent to the SSSI and the unmanaged land on the boundaries of the quarry on the north and east side.
- Wildlife Trust Surveys
- Geology of the Area
- Various Surveys from 1977 (Durham university) to 2000. Update surveys by Yorkshire Wildlife Trust 2009.
- The description of the land which is as follows;

The Magnesian Limestone forms the primary bedrock which is in a band 5 miles wide. The soft rock has weathered to from round escarpments. The soils are light and dry, ideal for cultivation, and for this reason much of the area has been ploughed leaving only small remnants of the original vegetation. The unimproved grassland and ancient woodland harbour a rich flora, with associated scrub being important for insects. Base rich flushes, rivers and streams that form important wet land features. Quarries cuttings and natural outcrops expose important geological exposures in the Permian Magnesian Limestone whilst limestone gorges and caves contain important Pleistocene sediments.

Fieldwork

10.3.12 A site walkover was undertaken in August 2015, March 2016, June 2016 and the end of June 2018 to inspect and photograph the site in relation to the ecological and geological features present and surrounding landscape for the future application in area 8. The field has been walked and the area to the south and north of the site for the area 8 application to add detail to the previous extension applications ecology data and measure the impact of the quarry on the SSSI. The date of the survey was appropriate for the assessment of the botanical interest for the full diversity of plants. As the work was undertaken in the summer of 2018 the Phase 1 Habitat Survey is accurate and represented the area and the surrounds to assess the impact from the extension of the quarry on the plantation and nearby quarry boundaries. The follow up visits were undertaken for Area 7 and area 8 to inform the restoration scheme and habitat.

10.3.13 A general faunal survey was carried out at the same time and any insects, amphibians, reptiles found were noted as was any birds and mammals seen.

Assessment Terminology

10.3.14 Species that have been recorded have been noted using the DAFOR scale.

- Dominant
- Abundant
- Frequent
- Occasional
- Rare

Cumulative Impacts

10.3.15 The extension to the quarry has been assessed with the other previously worked quarry areas to assess any cumulative impacts on the local habitat and the plantation. It is

understood from the applicant that there is no increase in output from the site other than that to be expected from normal economic conditions and markets for the stone.

10.3.16 It has been noted in the comments from the surveys and Natural England that the quarry does not seem to have impacted on the habitat in the plantation or the surrounding land since operations began and there is a great deal of data on the plantation from 1972 to 2018 which encompasses the quarry working at the present rate of output.

10.3.17 The site conditions, groundwater and water quality were determined by consulting maps and published information regarding the topography, geology, and hydrology of the area. Much of the information was obtained from the surveys undertaken between 1972 and 2018 and observations of fauna and flora in the area and the SSSI. In addition, the Environment Agency (EA) was consulted regarding the existing water quality of watercourses around the site.

10.3.18 *Fieldwork*

Site walkovers were undertaken in June 2018 to ascertain the current ecological conditions at the site and assess the watercourses and standing water. The assessment has been undertaken by three of the consultants advising the applicant. The ecologist has considered the River Went water course, the valley and the quarry including the extension area in the field from a habitat viewpoint, the consulting engineers have considered the existing quarry, area of stocking ground for soil, screen mounds and unkempt land on the quarry perimeter of the site and the Chartered Rural Surveyor at LRM has looked at the field where the extension will be and the remainder of Mr Elwess' fields to assess the potential for crop growing on areas outside of the extension. A desk top survey and walkover has been in area 8 has also been carried out by the archaeologist from MAP to assess the old crop marks and boundaries for further on site investigation. A desk based assessment and excavation has also been carried out by Archaeological Research Services on area 6 and 7 to advise the applicant on any forward work on the field to the east and record the findings in area 7.

10.3.19 MAP Archaeological Consultancy, MRB Ecology and CF Landscape have worked on the final landform and restoration of the site with LRM and Cromwell Mining Consultants to minimise the effect to the SSSI and surrounding land, design a restoration scheme that is an extension of the plantation and to record the past use of the site.

10.3.20 *Significance Criteria*

Table 10.3 – Significance Criteria

Significance Criteria	Description of Criteria
Substantial adverse	Severe detrimental effect to local watercourses. Permanent flooding or change to flow characteristics of watercourses. Permanent reduction in the quality of the surface water resource. Permanent adverse impact on aquatic flora or fauna.
Moderate adverse	Moderate detrimental effect to local watercourses. Severe temporary flooding or change to flow characteristics of watercourses. Severe temporary reduction in the quality of surface water resources. Severe temporary impact on aquatic flora and fauna.
Minor adverse	Temporary and minor detrimental effect to local watercourses. Moderate local flooding adjacent. Moderate local scale reduction in surface water quality, reversible with time. Reversible detrimental effects on aquatic flora or fauna.
Negligible	No appreciable impact on humans, aquatic flora and fauna, or surface water resources. Any minor effects are reversible.
Minor beneficial	Minor reduction in risk to humans, animals or plant health. Minor localised improvement to the quality of surface water resources or minor reduction in flood risk.
Moderate beneficial	Moderate reduction in risk to humans or aquatic fauna and flora. Moderate localised improvement to the quality of surface water resources or minor reduction in flood risk.
Substantial beneficial	Major reduction in risk to humans or aquatic fauna and flora. Significant localised / moderate to significant regionalised improvement to the quality of surface water resources. Moderate to significant localised/regionalised reduction in flood risk.

10.4 BASELINE CONDITIONS

10.4.1 The base line of the assessment is the existing quarry and the recent extension in Areas 5, 6 and 7 on the southern part of the site which is adjacent to the proposed extension onto area 8 from area 7. Area 6 has been assessed against the working in the north side

of the quarry in January 2016 to June 2017. Current activity is mineral extraction of limestone followed by processing with crushers and screens in the base of the quarry in area 6, loading and transport of fines to the wash plant, loading of product and tipping of fines against the face on the north side for future washing to sand. This activity could have an effect on the local habitat and the SSSI even though the quarry has been working in areas nearer to the SSSI between 1990 and 2013 in the ROMP area. For the planning permissions and working areas refer to plan numbers 2 and 4 that show the distance to the plantation and valley. The baseline conditions of the Plantations and surrounding area is there is a wide range of habitat in the SSSI and the perimeter of the quarry with nationally important flora and fauna.

10.4.2 Adjacent to the proposed site in area 8, drilling and blasting has taken place in area 7 and is still being undertaken at the surface near the boundary with area 7 to make the new extension reserves available. Soil has been stripped from Area 7 and area 6 for soil storage and stockpiled as a screen on the south side of the site adjacent to Went Edge Road. There is a soil mound along the east side of area 7 as a screen that will be removed and placed to the east of phase 8 A in the application area when area 8 is granted planning permission. The phases will be screened on each eastern boundary as quarrying progresses east and any additional soil placed in a more permanent area adjacent to Went Edge Road in the standoff. Any excess soil will be stored in the base of the quarry for future restoration.

10.4.3 The field where the extension area is located is in arable use and the base line is the arable use with ploughing, cultivation, fertilising, harvest and collection of the crop before ploughing again. There is a 10 metres wide standoff proposed on the north side of the boundary of the field for area 8 to protect the tree roots and to provide support for the boundary fence.

10.4.4 The current status of Brockadale Plantation is based on inspection and information from other botanical and ecological bodies. This status of rare habitat consisting of woodland on a steep crag is maintained and the current operations do not seem to affect the flora and fauna in the plantation or on the periphery of the quarry and in most circumstances improve the bio-diversity of the area when compared to the agricultural use.

10.4.5 Surface Water Quality

Data provided in the Environment Agency water sampling report indicates that the River Went has a GQA classification of:

- ‘River Quality B at NGR 450435, 417167, chemically approximately 400 m to the north east of the application boundary,
- River Quality B at NGR 445034, 417167 approximately 400 m to the north east of the site application boundary

10.4.6 The report in "What's In My Backyard" for WF8 3LU also indicated that River Went has improved in water quality from D since 1998.

- This improvement in water quality has been due to the demise of the coal industry in the Sharlston and Nostell area and the closure of a number of users of water for business use in Featherstone.

10.4.7 The biological quality of the River Went along a 3 kilometre stretch of the River (NGR 447941E 417166N has improved from Grade D (bad) to Grade B (good) during the years 1990 to 2010.

10.4.8 The biological quality of the River Went has improved over the period of time that the quarry has been working and output increased to the present levels. The quarry has increased in size over that period of time as working progressed east from the existing quarry alongside the boundary of Brockadale Plantation.

The quality of the River Went is assessed by comparing macro invertebrates in the river with what would be expected if the quality was A.

10.4.9 A request from information from the Environment Agency and Selby Council has revealed that there are no private water supplies or abstractions within 1 kilometre of the site.

Past Survey Data for the SSSI

10.4.10 A review of the data available on the SSSI and the surrounding land has been collated by the applicant's agent which is tabulated below:

Body	Year		Author	Comments
Durham University	1960		M. J. Harvey	Natural History Soc
Jim Williams	1980		Williams	Species List
Nature Conservation Council	1982		Target Notes	Survey and Map
NCC	Aug 88		Downstream Survey	Survey of River Went Little Smeaton to A1.
Bradford Botany Group	July 1992			
Brockadale Flora List	July 1997			Quarry near to area 11 on the map
Brockadale Sketches				NVC Survey
Brockadale Survey	August 1997		Dr Grant	YNU
Survey	Aug 99		York Univ	Plant and Fungi
Leys Lane Brockadale	Sep 99		YWT LCC	Planting
Yorkshire Wildlife Trust	May 2009		Various	Condition of the Nature Reserve

10.4.11 There have been no recorded pollution incidents in the area. The industrial estate and waste processing operations are regulated by Environmental Permits and enclosed within bays in the estate that has now been relocated in the base of the quarry. The recycling of inert material takes place in the base of the quarrying a dedicated area. The quarrying works Magnesium limestone a natural product. There are no risks to the environment from the activities undertaken in the quarry that can affect the habitat in the SSSI.

Statutory Sites

Introduction

10.4.12 There is a statutory nature conservation site adjacent to the existing quarry and the application area is 200 metres to the south of the Brockadale plantation. The surveys tabulated above provide detail on the habitat and the areas downstream of the quarry alongside the River Went.

10.4.13 There is one locally designated site of a Site of Importance for Nature Conservation (SINC) which is Brockadale and is encompassed within the SSSI. A YWT Nature Reserve is within the area of land of the SSSI in the Went valley.

10.4.14 There are several areas of priority habitat, Biodiversity Action Plan Habitat near to the site which include Lowland Calcareous Grassland, Lowland Mixed Deciduous Woodland and areas of grassland of an undetermined type. All of these are within the SSSI.

10.4.15 The previous site surveys have found a wide range of habitat, flora and fauna ranging from common amphibians, reptiles, woodland birds, a wide range of invertebrates, the whorl snail, mammals such as water vole, hedgehogs, hares and American mink.

10.4.16 A review of the surveys by the ecologist has found that Brockadale is noted for the rare species of beetle and fly and notable butterflies and three species of bumble bee. Regular moth trapping events take place with YWT and notable species of moth are recorded.

10.4.17 Rare plants and rare habitat exist within the plantation with nationally scarce species such as Monks Hood, field garlic, purple milk vetch, pale St John's Wort and rare spring plants on limestone crags and thin grassland.

10.4.18 The site supports calcareous grassland species such a stinking hellebore, bluebell, snow drop and box and includes nationally scarce mosses and lichen in the recorded flora. New species records are added regularly by the surveyors of the YWT.

Habitat Types

10.4.19 The application site lies within the arable field pattern of the area which has been intensively farmed for over 50 years. There is a belt of trees on the boundary of the application area near to the existing quarry face and that could provide habitat for birds and small mammals but the planting and unkempt areas of the quarry have provided compensatory habitat.

10.4.20 The ecological survey has extended to include the existing quarry and the boundary land with the SSSI. Within the quarry area and boundaries are;

- Broadleaved Woodland – screening on the quarry face crest,

- Tall Ruderals on topsoil heaps,
- Tree planting on the southern boundary of the site,
- Arable , field of stubble from cereal crop, just harvested at the time,

10.4.21 Other habitat outside of the application area but within the quarry and land up to Went Edge Road includes;

- The quarry which is bare limestone, and stockpiles with buddleia on
- Species Poor Hedge
- Bare ground where soil stripping had taken place
- Restored areas along the south side within the quarry with open faces,
- Unkempt land alongside the boundaries which provide micro habitat.

10.4.22 Additional habitats that lie around the quarry site at are;

- Semi broadleaved woodland at Sayles and Brockadale Plantation with ash domination and herb layer on valley sides,
- Broadleaved Woodland Plantation – Sycamore dominated.
- Scattered broadleaved trees,- riverside willow and ash,
- Continuous scrubland, elder, bramble and hawthorn,
- Scattered scrub of hawthorn,
- Improved grassland near the river,
- Species poor semi improved grassland –horse grazing floodplain pasture
- Unimproved grassland on slopes of the steep valley side.
- Semi improved grassland on pasture above floodplain
- Good quality river flowing east through the valley.

10.4.23 The habitat description of the application area is arable fields with up to 300 mm of topsoil on the land which is used for cereal growing and is classified as part Grade 2 and 3 land according to the agricultural land classification report for the fields in appendix 10. To the north is a tree belt of young trees planted on the slope side from the field area 8 level to the crag level and some self-seeded trees on the crest of the quarry face. To the south is a soil screen and store that has been planted with trees as part of the landscaping agreement for the previous planning permission for Areas 3, 4, 5, 6 and 7. Hedgerows of hawthorn and blackthorn have been planted along the boundary with Went Edge Road as part of the Section 106 agreements for these planning permissions to ensure the site is landscaped and screened from outside views. Area 6 is encompassed by hedgerows with

gaps in and Sayles Plantation to the north on the escarpment of limestone. Area 7 has been worked with a small woodland plantation to the north adjacent to the Brockadale woodland on the limestone valley side.

10.4.24 The arable field provides little in the way of habitat and is typical of intensive agricultural use with limited nature conservation value. The shelter belt of trees on the boundary of the IDO 237 area of the existing quarry and the access road into the site together with the rough land on the margins provide habitat for invertebrates and small mammals and nesting for common birds.

10.4.25 The data search of the area does not suggest that there are notable or rare species on the application site due to the arable use. No signs were found on the application site for areas 5, 6 & 7 or in the existing quarry boundaries on the north side during the walkover and surveys in June 2016 and June 2018. The grassland on the north side did contain St John's Wort and wild basil. Due to safety considerations as the grassland is on top of the quarry face the grassland was not surveyed in detail near the crest.

10.4.26 The trees can provide nesting for birds but are unlikely to be of sufficient size for bats to roost. There is limited connectivity on the boundary of the quarry to the woodland to the north and west.

10.4.27 There are no water habitats in the quarry or on the application area.

10.4.28 The arable field to be worked as area 8 is typical of a highly modified habitat subject to cultivation nutrient input, herbicide spraying and ploughing. The boundaries of the field support a typical diversity of weeds and ruderals that thrive on disturbed (ploughed) ground left fallow.

10.4.29 The woodland belt on the quarry is well established and will continue to mature without further intervention, the unmanaged grassland will if left alone will develop into scrub and eventually woodland. As the soil is required the areas will be mown and maintained so the soil can be recovered for the restoration of the site. This is to be deal with in the restoration, management and aftercare programme that is based on the previous schemes attached to the Section 106 agreements.

Impact Prediction

10.4.30 The assessment of the impact has been carried out as per the methodology in table 10.2.

- The potential adverse impacts of the extension of the quarry into the arable farmland on the ecological interests of site during mineral extraction and restoration.
- The significance of the impacts from extending the quarry to the west on identified ecological interest in the area with reference to the national or local species conservation and local planning policies and provision of a nature corridor in North Yorkshire.

10.4.31 It is likely that groundwater recharge is from the outcrop of the Ackworth sandstone beds at the surface to the west beyond the limestone escarpment in the exposed coalfield and where they are positioned against each other in the strata through faulting. There is no groundwater recharge at the quarry as water ponds in the base and could percolate through the limestone fines and rock to seep out in Brockadale Plantation in the crags running alongside the old mineral railway. The site does not contribute to the flow of the River Went.

Features Affected

10.4.32 From the proposals it is clear there will be a loss of low ecological value arable farmland to be replaced by woodland planting and calcareous grassland.

10.4.33 On the present survey evidence the loss of this monoculture habitat is unlikely to have any impact on the local biodiversity other than improvement from the landscaping of the quarry. It is considered to be of negligible or minor significance when the restoration of the quarry and the screening of the site are considered as that scheme will enhance the biodiversity of the area. There has been an increase in habitat with the screening and planting on area 3, 4, 5, 6 and 7.

10.4.34 There will be an increase in area of bio diversity due to the exposure of the limestone and the deposit of mineral and inert waste against the faces that will provide limestone grassland and habitat similar to Brockadale Plantation.

10.4.35 Due to the existing quarrying in Area 7 the habitat along the boundary of the site could be affected by noise and dust, machinery moving around and human presence but the habitat has been formed by the working of Areas 3, 4 and 5 by removing arable farmland and replacing it with hedge rows, screen bunds, tree plantations and bare substrate. Consequently when working is in the base of the quarry these areas around the surface will provide feed and cover for birds and small mammals.

Effect on Statutory Sites

10.4.35 The proposal to work Area 8 from Area 7 means there is no direct effect on the land to the north and east. Brockadale Plantation has been monitored for over 20 years and the habitat has gradually improved over that time as the water quality has improved from grade D to B and there have been more unmanaged parts of the quarry adjacent to the SSSI which have provided habitat. The ecology surveys of the quarry since 2009 to the present day have recorded the improvement to the habitat from the screening, planting and bare substrate in the area instead of arable fields.

10.4.36 The existing quarry is adjacent to area 8 of the Brockadale Site of Special Scientific and it is considered to be in favourable condition and has been maintained with no loss of extent. This is due to the topography of the valley and the inaccessibility of the land to the south of the valley within the quarry curtilage that provides a buffer to the adjacent land use of intensive agricultural farming.

10.4.37 Natural England commented that the favourable status of the site indicated that the quarry was not having an effect on the SSSI and at the time in December 2017 the quarry was

working in the north east corner of the whole site along the boundary with the plantation some 75 metres from Smeaton Crags. The application line for area 8 is 30 metres away from the boundary of the SSSI and is separated by the existing standoff for area 7 and the proposed standoff for area 8 of 10 metres which is the same as the standoff from the valley crest in the existing quarry. Areas 8 will work to within 10 metres of the woodland but there will be a standoff to protect the root systems and provide a belt of grassland.

10.4.38 A review of the published data and the survey has shown there will be little or no impact on the local habitat or the SSSI from the extension to the quarry. There will be a loss of agricultural land but it will not affect the overall productivity of the area in the other farmsteads and the restoration of the site will add biodiversity over a period of time as the arable land is taken for quarrying and restoration takes place. Sone land will be replaced by infilling area 6 to the surface and restoring it to farmland.

10.4.39 Quarrying and restoration will take place every day for a period of 10 years and the phased restoration of the site as shown on plan number 5 to 7 will provide more diverse habitat of greater ecological value to the land and the surrounding wood land plantation than the arable use.

10.4.40 It is certain there will be a loss of habitat associated with arable use of the extension to the quarry which is sporadic due to the cycle of planting, harvest and ploughing but this is outweighed by the re-creation of habitat that are of greater benefit as a whole to the area and extend the setting for the SSSI at Brockadale Plantation over a number of years. In the short period of time between harvest and ploughing before replanting with winter wheat the birds no longer have a winter feed stock which can be compared with the quarry that provides a variety of seeds and plants for birds which attracts mammals. Insects will also be prevalent in the long grass and unkempt areas on the periphery of the site.

Protected Fauna

10.4.41 A risk assessment approach has considered the impact of the existing quarry and the development and it is clear there is no impact on the fauna of the area due to the current activities and this proposal to extend the quarry. There will be a loss of foraging area in the arable fields but that area will be replaced in time with restored slopes against the faces and in areas access to the slopes from the surface to allow foraging on the plateaus and slopes.

10.4.42 Breeding birds and could be affected by the slight loss of stubble adjacent to the woodland on the north side of the quarry but there is a large area of woodland to the west and north with unmanaged land in the quarry north of the crest of the north side face. Soil bunds and screens with tree planting and hedge rows have compensated for the loss of the belt of trees in the application area and are growing on the soil mounds.

10.4.43 Removal of the arable farmland does present an obstacle to fauna circumnavigating the quarry and brings them closer to the B6474. There could be an increased risk of death to game birds due to the road but no road kill has been seen on the road during the inspections over the past 5 years. This risk is reduced as there are hedgerows along the

boundary of the road, tree planting and screen mounds to shape the area and the road is lightly used in the day and is unlikely to be used to any measurable degree after 11 p.m until 7 a.m so most fauna moving about at night will be at a low risk of coming into contact with vehicles. There is a standoff from the road in excess of 30 metres which is still undisturbed land even though it will be used for soil storage and landscaping that will be cultivated and planted to grass as the quarry extends eastward.

10.4.44 No changes to the hydrological, hydrogeological conditions on the site or the surrounding land have been noted due to the extension of the quarry to the west and east and it is assessed as being the same when working area 8. The river flow is not affected by the quarry or the other activities on site as borne out by the improvement in water quality since 1997.

10.5 Mitigation of the loss of the arable fields.

10.5.1 Minimising disturbance is related solely to the loss of the land as the quarry will remain extracting limestone and processing inert construction waste until the current permitted reserves are exhausted.

10.5.2 The site will be restored to a mixed habitat of industrial use in the floor of the quarry and woodland planting around the boundaries of the existing quarry with restoration of the workings progressing as quarrying extends to the east. Slopes with limestone soil and calcareous grassland will replace the arable farmland as shown on the working plan numbers 4 to 8 and plan number MW/275/11a.

10.5.3 Inspection should be made of soil bunds and grassland for fauna at the appropriate times before soil stacks are removed as they can provide ideal burrows for foxes, badgers and rabbits. The ruderals and grass on the soil stacks can provide nesting habitat and food for birds so the soil stacks should be maintained in autumn or early spring.

10.5.4 Dust deposition could present a problem to flora due to the dust preventing sunlight and affecting the photosynthesis of the plant. Normally in the UK showers are regular so dust is washed off but in periods of dry weather dust can affect plant health. The quarry operations are in the base of the quarry and therefore dust is mitigated by the quarry faces which also screen the working area from surface winds. Dust can be mitigated by management of the site in periods of dry weather with damping down and restricting soil stripping and soil stacking in long periods of dry weather.

10.5.5 Perimeter vegetation should be protected so as quarry plant and vehicles are not traversing the land and drivers are instructed to keep to the tracks on site.

10.5.6 Detailed restoration plans, reference numbers WEQ/AR08/PA-10, 10A to 10F show the slopes and the planting scheme will be the same as agreed in the section 106 agreement in place for planning permission in area 7, NY2016/0185/ENV other planning decision number (C8/45/13AL/PA), for planting around the site and the field to the access road to the quarry off Went Edge Road. The planting and management scheme for the site has been extended through section 106 agreements for area 4, 5, 6 and 7 that encompasses the screen mounds and planting for the 30 metres wide standoff area adjacent to Went Edge Road. A similar agreement will be prepared for area 8.

10.5.7 The applicant's agent and team have discussed the proposal in detail with the Planning Officer and the Principal Landscape Architect in June and July 2019 for the phased restoration of the site and the relationship with the existing quarry. The extraction of minerals in area 8A will coincide with the infilling of area 6 on the west side of the site and then phased infilling in area 5 along the southern boundary of the site against the face and the standoff.

10.5.8 A set of plans numbered 10A to 10 F with reference numbers WEQ/AR08/PA10 A to 10F illustrate the restoration of the existing quarry as work progresses eastward on area 8. The restoration will take place in area 6 to create grade 2 farm land and then create slopes in area 5, 4 and 3 with engineered fill from the waste processing area to be covered with limestone fines to create calcareous grassland with pockets of woodland planting. The concept is shown on plan number MWE/275/11a which has been discussed with the Principal Landscape Architect to create green infrastructure in the area and additional woodland planting to complement the Brockadale plantation.

10.5.9 The restoration scheme has been considered to provide a low level restoration scheme as the volumes of inert construction waste that are available will provide sufficient material for the low level slopes to be completed within the timescale discussed in the application of 8 years with 2 years of management and cultivation before the 10 years aftercare scheme.

10.5.10 Infilling of all of Area 8 has been considered to create the surface contours and the field area but it is thought that the period of activity would be extended by 7 years to 2035. The lower level scheme can be achieved in the time scale and will provide a varied habitat of woodland and grass which the ecologist has designed with the landscape architect and the mining engineer.

10.6 Conclusion of the Ecology Surveys

10.6.1 In conclusion the extension to the quarry to the east into Area 8 will have little or no impact on the surrounding habitat, biodiversity or the condition of the SSSI. Whilst there will be a loss of agricultural land it is within a parcel adjacent to the existing quarry in a field that becomes thinner in a north to south orientation so the restoration proposals shown on plan MWE/275 11a will ultimately enhance the biodiversity of the area and the habitat will be improved. The boundary lengths at the west and east side of the site are 50 metres and 75 metres so any field areas are constricted by the distance to the plantations and the industrial estate. Realistically only area 8 could be restored to provide a large field of 10 hectares with area 6 providing a further 2.5 hectares both located on the north side of Went Edge Road and adjacent to the SSSI into area 8 from Elwess' and Thompson's fields to the north and east.

10.6.2 The extension to the quarry will provide calcareous grassland and woodland planting near to the SSSI and will contribute to the extent of woodland and non-agricultural land near to Sayles Plantation and Brockadale SSSI. Area 6 will be restored back to arable use so the effect on Sayles Plantation will be over a short term and is likely to improve the habitat on the periphery as soil is stacked and seeded. Area 8 will provide additional habitat so that there will be 28 hectares of land that is additional to the SSSI.

10.6.3 Natural regeneration should be allowed on the restored parts of the site with limestone soils and dust used as a growing medium on top of any inert materials tipped against the faces. The top of the slopes should have plateau back to the face so as to create a flat profile with damp areas both north and south facing and the limestone faces should be exposed for a height of 3 to 6 metres if possible after assessing the stability of the face to provide crags as part of the slopes shown on plan number WEQ/AR08/PA-11 in appendix 2.

10.6.4 Offsite planting of hedgerow along the boundaries and tree belts to screen the quarry will provide more bird nesting habitat and unmanaged grassland around the quarry will provide habitat for invertebrates, small mammals and seed eating birds.

11.0 LANDSCAPE AND VISUAL IMPACT

Introduction

11.1 The extension to the quarry in area 8 lies on a 9.7 Ha arable field to the north of the B6474, Went Edge Road near Kirk Smeaton and Wentbridge WF8 3LU. Area 6 which is currently being worked is to the west of the estate access road into the industrial site and is 1.9 hectares and area 7 is 1.9 hectares. The extension was in total 8.1 hectares and the extension into area 8 is 9.7 hectares but only 8.6 hectares will be quarried once the standoffs are left. The fields is being used for arable farming up to the time of the application and phase 8A will be fallow until this application is determined on the land. The land is cultivated by the local farmer Mr Elwess under an agreement with the owner Went Valley Aggregates and Recycling Limited. The extension area is adjacent to the quarry Areas 3 and 7 and the existing quarry that has been worked continually from 1990 and sporadically since April 1947 between the B6474 and the River Went. Extensions to the east of the industrial estate and quarry have been granted from 1999 to 2018. Refer to plan number 2 (WEQ/AR08/PA-02)

CF Landscape Design was commissioned by Went Valley Aggregates and Recycling Limited to prepare a Landscape and Visual Impact Assessment of the site and the extension area to provide a standoff for the pylon with the working programme working phases 8 A to 8C and the restoration proposals with the engineer and ecologist to provide a robust scheme of low level restoration with material placed against the worked out faces and micro habitat formed with plateaus, scree and exposed faces. Area 8 was considered for the restoration to arable land at the same levels as exist at the present time but it has been decided to provide a lower level restoration in phases 8A to 8C and a plateau in phase 8C1.

The reason for doing so is that to procure 2.3 million cubic metres of inert waste and quarry material when there is a sustainable use for materials it is the duty of the quarry operator to reduce waste by making product from the fines produced at the quarry and from the inert waste stream imported to site. The material is washed to remove the sand and grit as aggregate sand for cable laying, concrete, paving and horticultural use. The clay fraction can be produced to make engineering material for earthworks and it will be used in the restoration of the quarry. The quarry should make 240,000 cubic metres of lime fines from the processing of stone from this application and a further 700,000 cubic metres will be required for the slopes to be built for the low level scheme. Consequently a lower level scheme has been chosen to meet the timescales to complete the work in a phased manner.

The aims of this document are

- To assess the landscape character of the site and its immediate surroundings and the value placed upon it.
- To assess where the site is visible from and the importance placed on views of the site.
- To analyse the cumulative landscape and visual impact of the proposals
- To analyse the landscape and visual impact throughout the construction period of the proposals
- To analyse the impact of mitigation proposals whilst working the quarry .
- To analyse the residual impact after restoration of the site.

11.2 At present the site is being worked in area 7 from 26 metres aod to 20 metres aod and area 6 is being worked for limestone down to 28 metres aod. The study analyses the impact of the existing quarry and the proposal to extend the quarry eastward into area 8 from a landscape and visual amenity aspect. The scoping opinion received from NYCC dated the 21st March 2016 for area 5, 6 and 7 has been considered together with the detailed response from Natural England and the Principal Landscape Officer at NYCC, Ruth Benson dated the 22nd December 2016 for the recently granted planning permission for Area 5, 6 & 7. Meetings have been held with the Council's Landscape officer in November 2014 and since then as extensions have been designed to maintain production at the quarry and relocate the industrial estate from the skyline. A revised scheme has been prepared for area 8 with a global restoration concept plan for the whole site based that the screening opinion has been received on the 21st March 2016 and the discussions and consultations held with the agent, YWT and the planning officers at the quarry.

11.3 The work has been undertaken by Catriona Furness who is a Chartered Member of the Landscape Institute with over 25 years' experience of working in the field. She has been the Principal of CF Landscape Design for 15 years. The practice has advised Went Valley Aggregates and Recycling Limited on the earlier planning applications and the evidence from those earlier assessments has informed this one for area 8. Meetings have been held between the landscape architect advising the Council and CF Landscape design to discuss the openness of the Green Belt and the provision of some green infrastructure. The applicant has looked at additional permissive paths on the site and one along the side of Went Edge road to from a circuit route around Brockadale Plantation.

Methodology

11.4 In carrying out the appraisal, the principles outlined within the guidelines listed below have been generally followed, the methodology being adapted to suit the individual circumstances.

- Landscape Character Assessment - Guidance for England & Scotland, published by the Countryside Agency. (2002)

- Guidelines for Landscape and Visual Impact Assessment, (3rd edition 2013) published by The Landscape Institute and the Institute of Environmental Management and Assessment.

11.5 A desk top search and study of published material, including OS maps, was undertaken and the area was studied in the field on 2 site visits, on May 15th and 22nd 2009 for area 3, further site visits for the area 4 LVIA, additional information to work area 5, 6 & 7 and this proposal to work area 8 with the latest visits being in July 2018. The landscape architect has been continually involved in the quarry since preparing the LVIA for area 3 in 2009. The cumulative effect of the extensions to the quarry has been assessed in detail since the quarry moved south to the 30 metre wide standoff to the B6474 in area 3 and 4.

11.6 The area of study has been defined approximately by the area from which the site can be seen (the visual envelope), although some reference is made to the area beyond the visual envelope in order to better understand the landscape character.

11.7 The criteria used for assessing landscape quality and sensitivity; and impact significance are explained at the beginning of the relevant sections of the Landscape and Visual Impact Assessment version 1 technical report included in appendix 8. The report is to be updated based on the current working area in area 6 and 7 and the granting of planning permission for those areas in September 2018.

Scoping and Consultation responses

11.8 A scoping report and opinion was received from North Yorkshire County Council 21st March 2016 for areas 5, 6 and 7 based on the Scoping Document and request submitted by Cromwell Wood Estate Company to NYCC in January 2016 based on the report produced in June 2013 for the screening opinion request to NYCC. The Scoping Document suggested that Landscape and Visual Appraisal be included as part of the Environmental Statement and this was agreed the Principal Landscape Architect for the County Council and the details provided by Natural England in their response in March 2016 and the updated response to the request for information from the agent for the extensions to the quarry now being worked in section 3 on Designated Landscapes and Character. None of the scoping consultations yielded any serious concerns about the impact of the works on the landscape and advised in the methodology to assess the impact.

Natural England referring to landscape issues by reaffirming the need for a landscape and visual impact appraisal of the development. The Environmental Statement has been prepared on the basis of the past screening and scoping opinions for extensions to this quarry including the advice given in consultations in December 2016 and meetings on site during 2017.

The LVIA has considered the working of area 5, 6 & 7 together with area 8 as well as current working in the quarry and the final restoration of the site including the benefit of relocating the industrial estate below the surface. The Landscape Architect believes that the work completed to date addresses the issues raised in the advice for

extensions to the quarry, in this case for area 8 and the assessment has been updated based on discussion with Ruth Benson for area 5, 6 and 7, the advice in the scoping opinion and the global restoration concept.

Ruth Benson the previous Principal Landscape Architect for NYCC before retiring requested that the cumulative effects of the quarry with other quarries and the extension of area 6 and 7 should be addressed. The relocation of the industrial estate in the long term as quarrying allows when the existing footprint is available was also discussed with confirmation this was an objective of the quarry operator. The relocation of the industrial estate has been completed and it has been removed from the skyline and is the second part of the long term management for the quarry and industrial estate. This work was completed for the areas 5, 6 and 7 application, reference number NY/2016/0185/ENV as stone was removed from area 5 and the IDO area in planning permission NY 2010/0317/MRP to provide a footprint for the gradual transfer of businesses to the site in the base of the quarry as shown on plan number 2. The effect has been considered for the expansion of the quarry into areas 5, 6 & 7 and the extension into area 8 for the local area in regard to programming the screening of the site and phases of restoration.

The further assessment for area 8 has considered the cumulative effects of other quarries in the landscape in particular Barnsdale Bar where the operator has applied for a large extension to the north of the existing quarry bringing the working area nearer to the village of Kirk Smeaton. The landscape architects have discussed areas 5, 6 & 7 in this quarry, the restoration of the site in the future in a wider context with the other quarries and the industrial uses such as the pylons and the power stations in the landscape. The discussions held in June and July 2019 have led to an overall working and phasing programme showing the actual areas that will be open at years 3, 5 and 8 and the corresponding areas in the quarry that will be restored in that time frame to maintain or reduce the areas of despoiled land.

The gradual removal of the soil screens along Went Edge Road as areas 6 to 3 are restored and the reinstatement of the open views across the quarry to the plantation with additional tree planting and a footpath riding route adjacent and parallel to Went Edge Road will move pedestrians, cyclists and horse riders off the B6474 in a safe environment for those activities joining two public footpaths.

Landscape Character.

Refer to drawing number CF/WE/526-2 in appendix 8.

National context

11.9 In 1998 The Countryside Commission (now Natural England) published a national Countryside Character Map. Went Edge Quarry lies within Landscape Character Area 30 of the Southern Magnesium Limestone character map. This area is long and narrow following the magnesium limestone escarpments from Bedale in the north of the county to Nottingham in the south. The escarpments form a narrow ridge feature dividing the

industrial coalfields and the Yorkshire Dales fringe to the west from the lowland valleys to the east.

11.10 From the Countryside Character Map the key characteristics of the South Magnesium Limestone area are defined as follows:

- *Elevated ridge with smoothly rolling landform dissected by dry valleys.*
- *Predominantly Magnesium Limestone geology which influences soils and ecological character.*
- *Long views over surrounding lowland.*
- *Fertile, intensively farmed arable land.*
- *Large fields bounded by low-cut thorn hedges creating a generally large scale, open landscape.*
- *Large numbers of country houses and estates with parkland, estate woodlands, plantations and game coverts.*
- *Woodlands combining with open arable land to create a wooded farmland landscape in some parts.*
- *Unifying influence of creamy white Magnesium Limestone as a building material often combined with red clay pantile roofing.*
- *River valleys and gorges cutting through the ridge exposing the underlying rock.*
- *Industrial influences, especially in the Aire and Don Valleys and other central valleys and along the Coal Measures fringe, with mines, shale tips, transport routes, power lines and industrial settlements.*
- *Main transport corridor of the A1 which is often apparent in areas of otherwise undisturbed rural landscape.*
- *Archaeological remains reflecting the long-standing importance of the area for settlement and transport.*

<u>County Context</u>

11.11 In May 2011 North Yorkshire Council published a county-wide Landscape Character assessment, 'The North Yorkshire and York Landscape Characterisation Project'. Within this document the North Yorkshire landscape is divided into 10 Primary Landscape Units then sub-divided into 40 Landscape Character Types. The proposed extension lies within the Limestone Landscapes primary unit and within the Magnesium Limestone Ridge Landscape Character Type. The key features described for the Magnesium Landscape Ridge are very similar to those of NCA 30. However this document also identifies 'Forces

for change' and 'Guidance for Managing Landscape Change' that have been used in other parts of this document and in preparing restoration proposals.

Local context (Western area of Selby Unitary Authority).

11.12 The network of small, often agricultural related, settlements has expanded in recent decades to confer larger village status on settlements in the area such as Kirk Smeaton, Womersley, Darrington and the villages between Pontefract and Doncaster.

11.13 In the response from the Principal Landscape Architect for the County Council the study of the West Selby ridge and the quarries in the area needed to be assessed to consider the cumulative effect of mineral extraction in the Permian Limestone exposure. The belt of limestone at the surface is only 5 miles wide in an easterly direction from Bedale into Nottinghamshire with deep valleys cutting through the escarpment of the limestone on the western extremity.

11.14 The study area is typical of the more rural parts of the Southern Magnesium Limestone character area 30, (or the Magnesium Limestone Ridge of the North Yorkshire County Council document), with the site located on the gentle dip slope of the escarpment running out towards the plain of York to the east. The Selby District Council Landscape Assessment (1999) identifies this area as 'West Selby Ridge', a local character area described as a *'low ridge of varied character, with open rolling arable farmland, large blocks of woodland, winding valleys of limestone streams and parkland which echo a rich historic heritage.'* Within this document a series of generic landscape types are also identified that occur throughout each identified landscape character area. The site lies within a 'Rolling Open Farmland' area of *'rolling lowland of intensively managed arable farmland. Open, with large fields and minimal enclosure, often by fragmented remnant hedgerows. Woodland cover is generally relatively insignificant. Wide views over surrounding lowland.'*

11.15 Plan numbers CF/WE/562/3 to 6 in appendix 8 deal with the landscape character of the area requested by the County Landscape Architect and consider the quarries at Barnsdale Bar, Hampole, Womersley and Darrington as well as Went Edge Quarry and the application area.

11.16 The River Went cuts through the escarpment across the study area in a steep sided valley with limestone crag or steep wooded sides. Beyond the valley the landscape is open with large intensively farmed arable fields overlying the very gently rolling landform, typical of the Rolling Open Farmland as described above. However to the north and south the landscape is slightly more enclosed by blocks of woodland, often on hillcrests or ridges, combining with the arable fields to create a wooded farmland landscape. The influence of earlier parkland landscapes at Stapleton Park to the north and Campsall Park to the south can still be seen in the pattern of woodland. Although this wooded farmland is some distance from the site its influence is manifest on the area due to the long open vistas. The A1 is a dominant feature of the landscape as it is for much of the magnesium limestone ridge, with noise and movement disrupting the

otherwise peaceful rural nature of the landscape. Power lines are also important features of the landscape, rendered quite dominant by the openness of the landscape.

11.17 The existing quarry no longer with the associated group of industrial buildings, (Smeaton Industrial Estate), is located on the southern flank of the steep valley sides of the River Went. The woodland of the valley sides forms a strong local feature in the landscape and effectively screens the quarry from all northerly directions. A linear belt of trees along the southern boundary of the quarry combines with the gently rolling topography to screen the quarry from the south. Thus the existing quarry is not visible in the landscape and only the access road are visible from Went Edge Road to the south, in the immediate vicinity of the access road. A LVIA was prepared for the new access road application with reference number NY/2017/0310/FUL. The influence of the quarry on the landscape character is manifest by the industrial fencing erected along part of the estate site access road and the recently formed soil bunds on the area between the existing quarry and Went Edge Road to the south.

11.18 The fencing has been removed and the access is bounded by cropped limestone walling. A second access has been provided to the west of area 6 and the quarry and this is bounded by a post and rail fence more in keeping with the agricultural use of the area. The screen mounds have been extended along the road side to prevent views into the existing quarry and will be planted up in the next planting season in November 2019.

Site Landscape Character

11.19 The site of area 8 is part of level fields that surround the quarry to the east and south. Area 8 is between the plantation to the north and Went Edge Road to the south, and is at its widest part adjacent to area 7 at 150 metres of extraction area. It is bounded by Thompson's meadow on the east and with no discernible boundary other than a grass verge on the roadside. To the west in the existing quarry the area is delineated by a recently planted hedgerow.

11.20 Recent works at the quarry have included those agreed on the screening of the quarry as part of the Areas 3, 4, 5, 6 and 7 planning approvals and working in the ROMP area part of the quarry where the industrial estate was. Soil storage and screening works have also been completed which consists of hedge planting along the Went Edge Road boundary, also along both sides of the current quarry access road to the west of the site and removing the subsoil down to the base of the quarry for use in restoration. A 10m woodland belt has also been planted next to the Went Edge Road and quarry boundary. Although immature at present as the hedgerows and woodlands develop they will form a strong boundary to the whole field within which Areas 3, 4 and 7 have been excavated. The hedgerows and woodland will be extended into area 8.

11.21 Soil storage bunds, from the creation of access to the Area 7, electricity cable diversion works around area 8 and soil stripping from the working area have been constructed along the Went Edge Road boundary, along the eastern site boundary of area 7 and also along the western and southern boundaries of Area 5 and 6 extraction area and

continued to the new access road. The current soil storage of mounds of bare earth and movement of plant across the surface looks like a minerals operation on the site. However this will be temporary effect as most of the mineral working is below ground level. As the mounds are completed and seeded, they will have a much lower impact and agricultural landscape features will be more dominant.

11.22 The remainder of the field now area 7 has a topsoil bund on the east side of the planning permission and the application site is ploughed and harrowed. The appearance and colour is similar to the surrounding arable fields now it is under arable use.

11.23 The northern boundary is the interface with the existing quarry with the plantation. Here there is a strip of mature woodland extending along the edge of the whole quarry, parallel to the woodland of the Went valley sides. The area 8 application incorporates a 10 metres wide standoff for the extraction to protect this woodland.

Proposals

11.24 Details of the proposals are discussed in detail in the working scheme provided in this document. A summary is given here for ease of reading, as an understanding of the magnitude of the proposals is necessary in order to assess their subsequent impact on landscape character and visual amenity.

11.25 The main aim of the proposals is to maintain production at the quarry and extend the area of mineral extraction east by 500 metres and 140 metres north to south to provide a further 4.9 million tonnes of limestone. The area is denoted as Area 8 and will be worked in 4 phases numbered 8A to 8C1 to minimise soil stripping and then the limestone will be worked by removing 3.5 metres of weathered limestone in advance of the main extraction the full depth of the limestone from the 3.5 metres below the surface to the base at 20 metres aod. Refer to plan number 4 (WEQ/AR08/PA-04).

11.26 The soil will be stripped off the grade 3 B land and placed in a screen bund to the south of area 8 with a shallow batter on the south side and seeded to grass. The subsoil will be placed in the 30 metres wide standoff as a screen and any additional soil will be placed in the base of the quarry for use on the restoration of the slopes when completed. Forward planting has taken place along the boundaries of the field and the access road as part of the landscape agreement with NYCC for areas 3 to 7. The programme of working and landscaping is a managed plan that included extracting the limestone that has planning permission under the industrial estate in a phased manner to place all the buildings in the base of the quarry as discussed in the ROMP submission NY/2010/0317/MRP. Further applications to extend the quarry working in the fields to the south for area 4 and 5 were to provide reserves at the same time as the limestone was worked in the industrial estate. The limestone was worked around the estate until it could be to relocated in the base of the quarry in the same footprint after competing working areas 4 and 5.

11.27 The quarry will work the area 8 limestone the full depth of the deposit from the surface at 56 metres aod from area 7 down to 20 metres aod which has been proved to be at least 6 metres above the groundwater table and above the marl material in the base. The processing of limestone creates fines material which is tipped against the face once working has ceased in that area of the site. This fines material is now screened and washed to produce limestone grit for the concrete block making industry around Selby and for concrete products. It is replacing the coal ash that was used in the past which has drastically reduced in volume since the phasing out of coal fired power stations. Fines of a clay fraction are recovered from the wash plant are drained and will be used in the restoration.

11.28 As the site has a waste recycling area and the majority of the imported material is inert, apart from topsoil and subsoil brought to site, the residue from screening can be used as engineering fill for the restoration programme and covered with limestone fines to create the slopes against the faces after the full depth has been worked. The covering of the slopes with limestone fines replicates the soil profile and will provide the base for the calcareous grassland.

11.29 The slope will be laid in layers to provide rock fall buffer zones initially but will continue to be tipped against to provide the profile shown in the restoration concept on plan number M/WE/275-9 in appendix 2. The slopes will have plateaus of land which is flat to promote dampness and shade on the north facing sides on the side of the 30 metres wide standoff so they will only receive the sun in high summer, scree will be included and the slopes will be seeded with grass and pockets of woodland.

11.30 Prior to the phase 8A excavation in Area 8 screen and noise bunds will be relocated from area 7 and constructed from topsoil stripped from the field and stored in the standoff to a height of 2.5m. The bunds will grassed for the duration of the extraction in Phases 8A to 8C1. The majority of the work has been completed on the periphery of the site as part of the forward screening for area 3 and 7 and this will be extended into area 8. The bund adjacent to the B6474 will be extended along the southern side of area 7 and alongside the eastern boundary of the field that is being taken in phases. The east side bund will be relocated from the present location at the side of area 7 to area 8A and for each phase.

11.31 The restoration scheme has been considered against the material that is available from site which is estimated to be between 10 and 15 % of the quarried material that being 500,000 tonnes, 125,000 tonnes and 25,000 tonnes per annum of soils imported to site from the recycling area and the stores of topsoil and subsoil. Together there will be 935,000 tonnes of material available over the duration of the extraction of area 8 to restore areas 5, 4, 3 & 7 to create the slopes and plateau and a further 900,000 tonnes of imported material for area 8. The limestone fines stored in area 5 and produced from processing area 8 limestone will cover the slopes. Area 6 on the west side will be filled to the surface with imported inert arisings and capped with quarry fines to replicate the limestone loamy soil to create grade 2 land. In all 700,000 cubic metres of inert material will be imported to restore the site to the levels shown on plan numbers MWE/275/11a and WEQ/AR08/PA-10.

Magnitude of the Proposals

11.32 The proposed Area 8 quarry extension covers 9.7 ha, 48% of the existing quarry area and 30% of the whole with the previous extension areas combined that have planning permission. The area of the operational quarry is 19 hectares and the extension in the field is 8.6 hectares of mineral extraction representing an increase in area of the 45% overall in the area of quarrying. The site will be restored at a rate of 1.5 hectares per annum and the quarry will advance at a rate of 1 hectare per annum so there will be no increase in quarrying land. As the waste management programme ramps up after the quarrying has provided more room the restoration of the quarry will increase in the south side of the site. The continuing work on the existing quarrying as shown on plan 2 (WEQ/AR08/PA-02 is all be below ground level with restoration of the faces with slopes means that the operational area is unlikely to exceed 15 hectares.

11.33 The phased working and restoration scheme is illustrated on plan numbers 10 A to 10F where working will take place in area 8 and there will be complementary restoration in area 6 and along te southern side of the site. The soil mounds will be removed to provide an open aspect where the site has been restored as the industrial estate is no longer visible in the skyline which has benefitted the landscape and openness of the Green Belt.

11.34 As the land is relatively flat there are restricted views into the quarry so apart from the screening around the south side of the quarry, the outer appearance will look the same. Now that the east side extension has been granted planning permission this application seeks to work the final 8.6 hectares in the field which is 9.7 hectares to the east of the to provide a longer term reserve of 6 to 8 years. No more reserves are available beyond the power line as there is a pinch point in the field on the eastern end.

11.35 The temporary soil bunds at 2.5m height will form small to medium scale features but once greened up will not be significant in this open, large scale landscape, except from very close viewpoints. After this stage of the works the excavation will be below the existing ground level.

11.36 The restoration of the site will represent a significant difference to the arable land now existing. The quarry will be landscaped with tree belts along the boundary of Went Edge Road, hedgerows alongside of the road and access into the industrial estate which will extend the area of trees in the landscape from Sayles Plantation, and blend with the woodland at Brockadale, Thorpe and Kirkdale plantations. Refer to plan number WEQ/AR08/PA-10 in appendix 2.

Landscape Value and Sensitivity

11.37 The open agricultural landscape is a very harmonious one with large scale fields overlying gently rolling landform divided occasionally by wooded valleys or by blocks of woodland on hillcrests or ridges. However the reduction in hedgerows and the poor, gappy condition of many of the remaining ones has lead to some deterioration in the condition of the landscape.

11.38 The A1 is an intrusion into this otherwise peaceful area with associated noise, movement, lights and gantries disrupting the smooth lines of the agricultural landscape.

11.39 Buildings and structures other than simple limestone farm buildings are very disruptive in this open landscape. Pylons and telegraph poles bring prominent urban forms seen against the open fields and skylines. To a lesser extent, due to their reduced visibility, the buildings of the industrial estate at the eastern edge of the existing quarry are also intrusive in shape, form and texture. Any signage beyond simple road signs can look cluttered and disruptive due to the openness and large scale of the landscape.

11.40 Overall, balancing the high quality of the large scale farmland with the detracting factors of the A1, pylons, other occasional urban influences and poor hedgerows, the landscape quality is assessed as ***good/medium.***

11.41 The whole landscape area is one of relatively high visibility, with few folds or features in the landscape to conceal changes, although the occasional woodland is effective at concealing intrusive land-uses. There are long uninterrupted views eastwards across the landscape from the magnesium limestone ridge. At the lower elevations views remain open but due to the general flatness, it takes only a slight rise in the land surface to hide views of low level developments, but taller features remain highly visible. For example, a combination of topography and woodland renders the present quarry, a potentially disruptive land use in terms of form, colour and texture, largely invisible and therefore unobtrusive whilst the tall power line carrying pylons, protruding above the land surface, have a strong influence on the landscape character.

11.42 Changes that reinforce the agricultural with occasional woodland landscape would bring positive change to the landscape, (for example improvements to field boundary hedgerows or to woodland.) Whereas changes that bring new uses, forms, textures and colours would prove disruptive. However developments that involve only low level features will prove easier to accommodate into the landscape than those that protrude above it. Also there is scope for new development if carefully sited within or near woodland. Landscape sensitivity is assessed as ***medium.***

General Visibility

11.43 This is a very open landscape with long views across the countryside from the magnesium limestone ridge to the west. However, although open, the relatively level area of the dip slope, within which the proposed site lies, overall visibility is less as even minor changes in landform or small woodlands result in a curtailment of the view. The approach from the east along Went Edge Road illustrates this situation where the very minor summit between Kirk Heaton and the A1 prevent views of the site from the east. From within the Went valley the steep wooded sides combine with the landform to limit views to within the valley itself.

11.44 The wooded valley sides and the woodland immediately above, (Brockadale Plantation to the north and Sayles Plantation along the south), effectively block views of both the

existing quarry and the proposed extension site from the north, north-west and north-east. There are some glimpsed views of the offices of Smeaton Industrial Estate to the west of the present quarry in winter, but these will be curtailed in summer when the trees are in leaf in Sayles Plantation.

11.45 There are some distant views of the proposed extension area from higher land to the south east above the village of Thorpe Audlin, but the site is difficult to ascertain due to distance and the small part it plays in much wider view. Similarly, there are likely to be some views from the A1 to the south, but these will be quick glimpses before the road drops again to cross the Went valley.

11.46 Close views are afforded from Went Edge Road between its crossing of the A1 and the local summit towards Kirk Smeaton. Here, proximity to the existing site results in high visibility and the lack of hedges alongside the highway means that the viewer can look across the arable field to the woodland which can be compared with the soil screen and hedge planting on the side of Went Edge Road on area 3 to 6.

11.47 Discussions have taken place in July 2019 about the cumulative impact of the quarry extension with the existing quarry and how that could affect the openness of the Green Belt. Mineral Extraction is not inappropriate development in the Green Belt as long as the openness is not affected by structures such as regular shaped stockpiles and soil mounds, traffic travelling on the sky line, plant and equipment in view and the size of the quarry in comparison with the surrounding landscape.

11.48 The screen mounds along Went Edge Road together with the hedge row to be planted on the verge boundary with intermittent trees as agreed with the Principal Landscape Architect at the County Council should not affect the openness of the Green Belt considering the large landscape of arable farmland, with woodland and hedges albeit gappy in places the hedges that remain. The screen mounds will have shallow outer slopes facing the road and will be seeded with grass and some shrub planting at the base of the slope. The mounds will be 2.5 metres high and should be indiscernible from the rolls in the topography in the wider view with woodland and pasture.

11.49 There is no guidance on the openness of the Green Belt so it is a matter of judgement and expertise in what would affect the landscape and openness of the area. The back drop of the quarry is the Brockadale Plantation which is mixed broad leaved woodland when looking north. The industrial estate and the large portal framed building that used to be on the sky line has bene removed and no buildings associated with the industrial use can be seen in the landscape.

11.50 There are elements of industrialisation in the area with tall national grid power lines to the east of the application area, power stations in the distance, the A1 with traffic signs and lighting and the concrete viaduct over the River Went.

11.51 The stripping of soil will be at the surface and will be within the landscape whilst taking place. In landscape terms the activity of pant at the surface will not look too dissimilar to large agricultural machinery associated with cultivating the land so to the passing or distant viewer soil stripping to build the screen bunds will not be intrusive.

11.52 Once the soil stripping has taken place and the screen mound as are in place the limestone extraction will take place from the rock head to a depth of 3.5 metres to remove the soft limestone before the rock is drilled. Machines will not be visible due to the screen bunds on the perimeter of the working area so the openness should not be affected.

11.53 If the County Council or a third party was to disagree with the applicant about the effect the proposal of working the eastern extension whilst restoring the west side in phases then the applicant should provide very special circumstances for development within the Green Belt. The NPPF considers the thread of the planning guidance and any development proposal to encompass economic, social and environmental objectives. The proposal is sustainable in that it is an extension to an existing quarry and if planning permission was not granted then the existing quarry would be restored and the reserve under the field would be left and sterilised.

11.54 As discussed earlier the extension area is 150 metres wide at the present location adjacent to area 7 but reducing in width to 75 metres by the side of the power line and Thompson's meadow. The meadow forms part of the SSSI so is a natural boundary to any further extension and the land is not wide enough.

11.55 The products made from the operation will use all of the minerals including the clay fraction which is to be used as a soil and engineered fill. The operation will also utilise waste from the construction sector to provide engineering fill and divert waste away from disposal.

11.56 There is an economic benefit to the proposal in that it provides 10 more years of work for the skilled workforce of 30 who support their families with well paid jobs. These families live locally and contribute to the economy of the Pontefract and Selby areas. The applicant company also employ contractors to maintain equipment, landscape contractors to maintain the peripheral hedges and trees, fuel distributors and professional advisors to ensure that the quarry remains compliant with all legislation.

11.57 The social benefits of the extension to the quarry are that the company will continue to provide services to the village communities in relation to the support of local functions and initiatives, the use of their machinery for any landscaping or general tidying up. The company support a number of sports club including Featherstone rovers RLFC. There is also the social aspect of the workforce being a team promoting training, wellbeing which follows through with their families creating healthy neighbourhoods. The workforce are people who choose to take jobs in what is a manual blue collar, or orange collar career where school qualifications are not as important as common sense, hard work and responsibility for one's safety and other workers.

11.59 The scheme will also provide footpaths and cycle tracks alongside Went Edge Road as connection to two public footpaths at Thompson's field and to the west of area 6 where the path runs back to Sayles Plantation under the A1 and to Wentbridge. The site will have green infrastructure in the way of walks around the restored area into Brockadale Plantation and Yorkshire Wildlife Trust will have a long term lease and management agreement for the ongoing care of the restored part of area 8 funded by income and a sinking fund from the quarry operator.

11.58 The restoration of the whole site has been designed by the applicant's ecologist, landscape architect and mining engineer to provide a platform for the habitat to be recreated that will enhance the land around the SSSI and Went valley. The scheme incorporates calcareous grassland, hedgerows, pockets of woodland on the slopes and the removal of soil screens so that the open views from Went Edge Road are to the boundary of the broad leaved woodland in the valley sides.

11.59 A Zone of Theoretical Visibility (ZTV) has been used by obtaining the digital terrain data for the area using the contour values to assess the visibility of the extension of the quarry into Area 8, refer to plan number CF/WE/526/5in appendix 8. The ZTV does not account for features that break up the visibility such as woodland, walls, hedge patterns and buildings so it has been used to generate areas where there could be visibility to the quarry and other quarries in the area. It is generous in the extent of the visibility envelope for the area precisely for the reason above so areas have been visited to check on the visibility of the quarry from the viewpoints which are discussed in the Landscape and Visual Impact Technical Document in appendix 8.

11.60 Distance from the site has an obvious impact on the visibility, and views from beyond 3km are judged to be of low significance. For assessing inter-visibility with other quarries or large scale structures views of a maximum of 5km was used, being judged from field study as the maximum distance within which Went Edge, other quarries or large scale structures are noticeably visible.

11.61 For footpath users and to a lesser extent cyclists and horse riders in this area, the quality of the long views across the landscape are an important part of the users enjoyment of the area. However this is not an area of high recreational use. There are few public rights of way, and no strategic routes of regional or national importance, neither are there any recognised viewpoints, picnic areas or beauty spots. The uniformity of the area, with the noise and movement of traffic on the A1 and other roads are not conducive to intensive recreational use. Thus the sensitivity of visual receptors using the public rights of way network is assessed as ***medium***.

11.62 Vehicles travel through the landscape at speed thus views are glimpsed very quickly and are transient. On the A1 in particular speed is such that views of the quarry are seen for a very short period of time. The sensitivity of the visual receptors in vehicles is assessed as ***low***.

11.63 No views of the site from residential buildings were identified.

Individual viewpoints.

11.64 The viewpoints, that are considered representative of the main views of the site, have been assessed individually. The criteria used for assessing impact at these views are explained in the methodology. The viewpoints are at the location shown in the table below and summarised.

View 1 to 10	During Work	After Restore	Location	Co-ords / Lat
Leys Lane	Med Adverse	Minor Neutral	East of A1 – 0.8 km north east of quarry ext	

Info Board on FP 35 for SSSI	Minor Adverse	Negligible	In the valley bottom to Brockadale	
FP 35 on opp side of valley	Low Adverse	Negligible	North east of quarry phase 8C1	
Seat on FP 35	Low Adverse	Negligible	250 m east of phase 81C	
FP 35 and Leys Lane opp side of valley	Mod Adverse	Neutral	170 m east of Phase 81C	
FP crossing River Went	Minor Adverse	Negligible	140 m east of phase 81C in valley	
FP 35 in valley bottom south of River Went alongside Powerline	Minor Adverse	Not Visible	120 m east on valley bottom	
Jct of F 35 and Went Edge Road	Mod Neutral	Beneficial	110m south east of phase 81C	
Went Edge Road looking West	Mod Adverse	Negligible	105m east of the quarry	
Middlefield Lane and Went Edge Road	Negligible	Negligible	30 metres from boundary on B6474	
Summary	**Mod Adverse**	**Negligible Low**	**100 m to 400 m**	

11.65 The smooth, open, agricultural landscape will be largely unaffected by the proposed quarry extension after restoration, due mainly to its low visibility in the landscape. There will be no major changes to landform, new structures or vegetation, or removal of important features that contribute to this landscape character. Whilst the low level restoration of the quarry extensions to a grass covered void in the ground will involve the removal of part of one of the large, level fields that are a defining feature of the landscape character, the fact that it will be almost unseen means that the effect is very low, or negligible. The ecological benefits of increasing the magnesium limestone grassland habitat outweigh the potential disadvantages of interruptions to the landscape character.

11.66 One of the features of this agricultural landscape is large fields devoid of hedgerows or with poor hedges with large gaps. Up until recently when farming practices changed due to the stewardship scheme hedgerows were removed to provide larger fields for larger agricultural machinery. This has been identified in the NYCC Landscape Characterisation document.

11.67 The forward planting proposals agreed under the Section 106 agreements for planning permissions NY/2010/0158/FUL, NY/2014/0113/ENV and NY2016/0185/ENV include re-instating the hedgerows along the southern boundary of the extensions to the quarry, extending along Went Edge Road eastwards to the extent of the workings, and also along the eastern site boundary. This will bring positive benefits to the landscape character, particularly as the hedge lines will be prominent in views from Went Edge Road. A section 106 agreement signed in September 2018 that enhances the planting scheme and the management of the land.

11.68 The removal of the industrial estate from the skyline has had a beneficial effect on landscape character by removal of a feature of the landscape and the exposure of industrial buildings for Smeaton Industrial Estate looking from the east. A screen bund has been placed on the eastern boundary of Quarry Area 7 which has mitigated views in to the extension in area 7. This screen bund has been discussed with the County Landscape Officer and there has been some landscaping of the corner and thickening up of the bund on the eastern boundary. The proposed woodland belt behind the hedgerow alongside Went Edge Road and that alongside the access road would create a significant new woodland feature in the local landscape alongside Area 8. From more distant viewpoints this would have the effect of extending the 'wooded farmland' landscape of the area north of the River Went, into the more open agricultural landscape, (described as 'rolling open farmland' in Selby DC's Landscape Character Assessment). More locally it would add enclosure to the landscape, curtailing some of the longer views, but as it would reflect the linear form of the Brockadale woodland it would not present an intrusive feature, merely an increase in the extent of an existing landscape feature. The woodland would have an early impact on views and landscape character as longer view features that protrude above the relatively level land surface are prominent in this landscape. As it matures its prominence will increase.

11.69 The positive benefits of the strengthening of field boundaries and the moderate increase in woodland outweigh the potentially negative effect of removal of a level agricultural field and its replacement with a grassed void. The relocation of the industrial buildings to the base of the existing quarry over the last two years has also had a beneficial effect. Thus, on completion of the restoration, the effect on landscape character and visual amenity is assessed as ***minor, beneficial*** for area 8 and the rest of the quarry***.***

11.70 The effects on the landscape and visual character of the area is minor as most of the works are below the ground surface which will not be seen in this level landscape. However the initial works of soil and overburden stripping will involve vehicles and plant moving over the surface of the land. This will have a strong, negative effect on the local landscape character and views from Went Edge Road. However this disruptive element of the works would be short lived. In more distant views, from the higher ridge to the west, the workings will be a small part of a wide view within which the noise and movement of the A1 are just as disruptive to the rural landscape as the soil stripping operations of the quarrying.

11.71 The screen bunds along the southern boundary of the extension with proposed woodland planting along Went Edge Road boundary will effectively screen views of the plant movement from the south. Views from the east, across the site's western boundary, will be effectively screened by bunds and gaps in the hedgerow along the eastern field boundary constructed and planted as part of the first extension. Views of the plant movement from the west will be screened by soil storage bunds along the western boundary of the area 6 quarry and also by the woodland planting along the access road, substantially completed as part of the Areas 7, 3, 4 and 5 extensions. There are likely to be some views of the soil stripping and bund construction, but as these are middle to distant views, including very fleeting views from the A1, the effect will be slight.

11.72 The screen mounds could be a significant feature in the landscape for the duration of the works in area 8 but the mounds on the previous working areas will be removed as restoration progresses east. The regular shape is somewhat intrusive in this very gently rolling landscape, but the colour and texture are similar to the surrounding fields thus rendering it insignificant in all but the closest views and immediate vicinity. The screening for area 8 can be gentler with less engineered look on the outer slope. The proposed woodland belt between the road edge and the bund will further break up the severe lines of the mound profile, helping to integrate it into the landscape.

11.73 During the works the effect of the proposed quarry extension on this relatively level, agricultural landscape is assessed as ***minor, adverse***.

<u>Cumulative Effects of the Extension in Areas 5, 6 & 7 with Area 8.</u>

11.74 The effect of the extension to the quarry has been assessed against the existing quarry including area 6 and 7 extension granted planning permission in September 2018 and the new access road on the west side recently granted permission. The extension areas for 3,

4, 5, 6 and 7 were supported by a LVIA, that was updated and the area extended for the cumulative impact of the site with other quarries and this application for area 8 has reviewed that information and extended the impact assessment for the global scheme shown on plan number 10 to restore the quarry.

11.75 The proposed Area 8 extension is an integral part of the existing Went Edge quarry and is immediately adjacent to the approved Areas 3, 4 and 7 extensions. As it is difficult to assess in isolation, the cumulative effect of the whole quarry development, together with the effects of the proposed Area 8 extension, have been assessed and described in the preceding part of this document. Area 6 has been treated in the same way albeit recognising that area 6 is a westerly extension to the quarry to the west of the old industrial estate access road into the site.

11.76 The significance of the impact of a development on landscape character and on views of the site is a function of the landscape sensitivity and the magnitude of the proposals. Landscape impacts are likely to include both positive and negative effects, to varying degrees. The overall impact of the proposals on landscape character and visual amenity is described according to the significance criteria set out below.

Impact score		**Criteria**
Major adverse.		The proposals woul landscape. They wo landscape or its cha substantially damag
Moderate adverse		The proposals woul with the local patte impact on a landsca
Minor adverse		The proposals woul landscape. They wo character.
Neutral		The proposals woul the landscape. Exis
Minor beneficial		The proposals have character; they wou landscape; they wo features partially lo
Major beneficial		The proposals woul landscape characte

		removal of damage

11.77 General points relating to the impact of the proposals on landscape character are outlined below. More detailed assessment on the impact on individually identified visual receptors is included in the Table in paragraph 11.52.

11.78 The study area for Went Edge Quarry has been defined largely by the area from which it is visible. Within this visual envelope only Barnsdale Bar Quarry, 2.7km to the south, is potentially visible in the same view as Went Edge Quarry. Darrington Lees and Stubbs Lane Quarries lie 4.1km to the north but are not visible from Went Edge Quarry or appear within the same field of view due to topography (as illustrated by the ZTV, dwg no CF/WE/526/5), and intervening woodland. Similarly Womersley Quarry and Colliery Spoil Disposal site 3.4km to the north-east.

11.79 Eggborough Power Station ash disposal mound, known as Gale Common, to the north-east of the site is visible (on a clear day) from the A1 (View 12). Went Edge quarry is also visible within these views. Although not the same type of development as a quarry, due to its scale and significance within the landscape it has been considered as part of potential cumulative effects of the quarry development. Eggborough Power Station and Gale Common PFA mound are 6-7km from the viewer on the A1 and 5.6km from Went Edge quarry. At these distances the power station is just on the edge of visibility, but on a clear day the south-western faces of the PFA mound, (Gale Common), can be seen from Barnsdale Bar quarry, parts of the A1 and footpaths crossing the limestone ridge to the west of the A1. The cooling towers of Eggborough Power Station behind the PFA mound are a distant focal point, much more dominant than the mounding that, although a significant feature in the landscape, is overshadowed by the visual strength of cooling towers. Went Edge Quarry can be seen in the same panoramic view as the PFA mound and the cooling towers but the scale of these features is so much greater than the quarry that the importance of the quarry is negligible in the wide views. Combined with the distance both from potential viewers and from Went Edge Quarry it is concluded that the proposed extension at Went Edge Quarry has no cumulative effect with Eggborough Power Station and PFA mound. It is noted that Eggborough Coal Fired Power Station is to be demolished under the Consent Order for a Gas Fired Power Station.

11.80 Barnsdale Bar Quarry is an active quarry and landfill site located 2.7km south of Went Edge quarry. The permitted area is over 24 hectares and runs until 2025. At the end of 2018 it had an estimated remaining reserve of 5 years. Landfill for waste was authorised until 2013.

11.81 As for Went Edge Quarry, the visibility of Barnsdale Bar is generally low due to most of the works being below ground level in a broadly level landscape where minor structures, vehicle movements and soil bunds are easily obscured by very small changes in topography, hedgerows or woodland. The plant and buildings of Smeaton Industrial Estate can be glimpsed from Barnsdale Bar Quarry, filtered through trees, but it is very difficult to distinguish due to the distance. The distance apart and individual locations

mean that it is highly unlikely that the two quarries appear in the same view, thus the cumulative effect on visual amenity is ***negligible***.

11.82 Potential sequential views of quarries have been investigated. Views of Went Edge Quarry from vehicles on the A1 travelling north may be glimpsed quickly and views of Barnsdale Bar may be glimpsed from vehicles travelling south, but in both cases these are very minor glimpses, seen very fleetingly. It is highly unlikely that a vehicle travelling north will gain a sequential view of the Barnsdale Bar, then Went Edge quarries and vice versa for vehicles travelling south. A bridleway running north from Barnsdale Bar Quarry would theoretically provide sequential views of the 2 quarries that would be less fleeting, thus more intrusive. However distance, small variations in topography, hedgerows and trees prevent these views from all but 100-200m of the bridleway very close to Barnsdale Bar quarry. Here, Barnsdale Bar quarry will be dominant in the foreground of the view with Went Edge Quarry being insignificant in the distance.

11.83 Thus the cumulative impact of the two quarries on visual amenity is assessed as ***negligible***.

Summary and Conclusions of the Landscape and Visual Impact for Areas 5, 6 & 7 with area 8 and the restoration concept for the whole quarry.

11.84 The landscape character is of very gently rolling farmland cut through by the steep sided River Went valley. The magnesium limestone ridge runs along the west of the study area and the quarry site lies on the long gentle dip slope running out towards the plain of York to the east. Large blocks of woodland form defining features of the landscape character, particularly the linear form of the River Went valley and Brockadale woodland, but also on hilltops or ridges to the north and south of the study area where the woodland pattern reflects the influence of earlier parkland estates. The large, intensively farmed arable fields overlying the very gently rolling topography create a harmonious rural landscape. However urban features of the A1, with its associated signage, gantries and lighting, and pylons carrying power lines are also integral parts of the landscape character diluting the rural, peaceful nature.

11.85 The strong, large-scale field pattern, is largely intact, but is under threat from the removal and poor management of field hedgerow boundaries. In addition to the urban features of the A1, pylons and power lines, the minor features of intrusive signage and office buildings associated with the existing quarry also reduce the cohesiveness of the landscape. The influence of the detracting features on the landscape result in an assessment of landscape quality of ***good/medium***.

11.86 Landscape sensitivity is a measure of how well changes can be assimilated into a landscape. In an open, fairly uniform landscape such as the study area, it is largely a function of the area's visibility. In addition features not already represented in the landscape are likely to be disruptive and in this area the uniformity of the landscape means it would be sensitive to most non-agricultural developments. There are long open views over the landscape, particularly from the ridge to the west, although woodland is

important in providing enclosure and curtailing some views. The openness and general level landform results in high sensitivity to new developments that protrude significantly above the land surface, for example pylons are highly visible and disruptive. However the lack of high viewing points means that even small variations in topography or vertical features such as woodland or hedgerows are effective in screening low level developments. New developments can be accommodated more easily amongst or against woodland than on the open fields. Balancing the sensitivity of the area to tall, non-rural developments, with the lower sensitivity to low level or agricultural developments the landscape sensitivity is assessed as ***medium.***

11.87 The proposals involve the quarrying of limestone from an area of 8.6 ha over an additional 6 to 8 years. This would be the fourth extension to an existing working quarry currently 19 ha in area with a first extension, (Area 3), of 1.2 Ha a second area, (Area 4), of 1.7 Ha representing an increase in size of 25%. The areas 5, 6 and 7 application area is 8.2 hectares and area 8 field which is bounded on all sides by woodland and hedges is 9.7 hectares. The extension is immediately adjacent to area 7 and should be considered with the existing quarry in determining the magnitude of the proposals. Both the Area 4 and Area 5 extensions were set back 30m from Went Edge Road and this proposal seeks to maintain the standoff adjacent to the B6474 to 30 metres. The screen bunds have been built alongside the road, tree planting has taken place and the hedges have been replanted along the boundary with the road. The existing quarry access together with the new access would be used and there would be no increase in the number of vehicles entering and leaving the quarry. As part of the southern extension proposals a woodland belt of 10m width was planted along the Went Edge Road boundary and one of 6m width along the quarry access road which have been completed. The Area 8 extension works would take place within this context and new soil bunds of 2.5m height would be constructed along the southern sides of the extraction area. The restoration would be a continuation of the low level scheme proposed for the other extensions as shown on plan number 10 in appendix 2. A void will be created, edged by a series of benches and 1V:2.5H slopes into area 7 and 8 with occasional vertical rock faces as shown on plan numbers CF/WE/275/9 ad MWE/275/11a. This would be seeded with a grass mix to encourage the development of typical magnesium limestone flora. The scale of the proposals of the Area 8 extension is relatively medium but, due to proximity in area and time, the magnitude of the area extensions should be judged together.

11.88 Despite the general openness of the landscape the site is not visible apart from the security area and the office. Brockadale, Sayles Plantation and Went Valley woodland wrap around the quarry site to the north curtailing views into the working area from the north, north-west and north-east. The site is visible in distant views from the western ridge but is insignificant as part of a very wide view. Close and medium views are obtained from Went Edge Road to the south, south-west and for a short distance to the south-east and east albeit the land and the viewer are at a lower level.

11.89 On completion of the restoration the impact of the restored quarry on landscape character will be small, due mainly its low visibility. After restoration, and to some extent during the works, views from the south will be curtailed by the top of the woodland belt along the

Went Edge Road boundary and by the hedgerows along the eastern and western boundaries of the site. Due to the relatively level topography, the hedges will be very effective in preventing views of the grassed void. The re-planting of hedgerow boundaries will also help to counteract the loss and poor management of hedgerows that currently contribute towards a deteriorating landscape quality. The loss of some of the trees along the southern boundary of the industrial estate when it was relocated and the stone worked has not had a negative impact on landscape structure as the industrial look has disappeared and has been compensated by the woodland, particularly the belt alongside Went Edge Road which should be mature in 10 to 12 year time. The proposed woodland belts will have a neutral impact on landscape character, extending the 'wooded farmland' landscape character southwards into the more open rolling farmlands. The increase in species rich limestone grassland habitat, similar to that of Brockadale Nature Reserve will be of great benefit to local biodiversity. It will fully comply with North Yorkshire County Council's 'Guidance for managing landscape change' for this area in that it will *'Restore, extend and link unimproved limestone and neutral grasslands and manage through extensive grazing to achieve a strong linked network and reduce the fragmentation of these habitats'* (The North Yorkshire and York Landscape Characterisation Project'. 2011)

11.90 During the initial soil and overburden stripping, the noise and movement of soil stripping plant will be intrusive and detrimental to landscape character, introducing surface mining elements into this rural area. It will also be detrimental to the mid - close distance views from the south and west. However, this is a short-lived operation and once the works move below ground level the effect on views and landscape character will be very low. Views from the south-east will be less affected as the surface works will be screened by the bunding along the eastern boundary of the first extension. Views of the surface workings will also be mitigated to some extent by the new woodland along the Went Edge Road boundary and along the quarry access road.

11.91 The soil bunds themselves will form somewhat unnatural features impacting negatively on views and landscape character in the immediate vicinity, but the grass covering will help to integrate them into the surrounding fields, and the proposed woodland and hedgerow in front will visually break up the outlines of the structures.

11.92 The scale of the proposals, the small contribution quarrying makes towards defining landscape character in this area, and the generally low visibility of Went Edge and other quarries in the vicinity results in a ***negligible*** cumulative effect on both landscape character and on visual amenity.

11.93 Overall the effect of the proposals on landscape character and visual amenity is assessed as ***minor adverse*** during the works but ***minor, beneficial*** after restoration.

11.94 The landscape and visual impact assessment for area 8 has extended the impact assessments that were addressed for the area 3, 4, 5, 6 and 7 applications as discussed in the letter from Ruth Benson of NYCC dated 6th January 2014 and the advice given during the determination of those planning applications. Meetings were held at

Northallerton in November 2014 to agree the restoration scheme for the existing quarry, the mitigation for the surface working and the aftercare of the site.

11.95 Area 8 is the next stage of the programme of work to maintain the business after the relocation of the industrial estate in the base and provide a diverse habitat of calcareous grassland. Discussions have taken place with the Principal Landscape Architect Mr Wainwright in June and July to reach a consensus of what can be achieved in the restoration of the whole quarry. Initially bringing the land back to the surface and laying the land back to agriculture was looked at in those meetings but the applicant had tabled a lower level restoration scheme as part of the scheme agreed for the existing quarry due to the probability that there would not be 2.3 million cubic metres of fill available over a period of 8 years which would require the importation of at least 200,000 cubic metres per annum.

11.96 This could be deemed landfill by the Environment Agency and therefore would be unable to compete with the recycling and recovery schemes at other sites. The situation may change in that the restoration to the surface can be achieved albeit with a slightly longer timescale but the applicant will consider that option once the waste stream has been established and the quantities. The scheme that has been agreed in drawing number MWE/275/11a is a recovery scheme as it is beneficial for the land.

12.0 Archaeological Investigation

12.1 The site is located near to archaeological interests and the old ordnance survey maps for the area show Castle Hill Earthworks. There is also reference to a fort on the hillside on the south side flank of Brockadale Plantation with evidence of habitation and farming practices during Iron Age and Roman times. Consequently there is a requirement for an archaeological assessment.

12.2 The applicant and the agent have considered the publication " Mineral Extraction and Archaelogy: A Practice Guide written by Archaeological Research Services and that company was engaged by the applicant to prepare a site investigation into the archaeological interest of Area 5, 6 & 7 after completing the work on the Area 4 and 5 extension areas. Area 4 was permitted in July 2013 and Area 5 was included in the work for the reserves within the area of the quarry. An evaluation survey with trenches was undertaken on Area 5 in Autumn 2014 and no artefacts were found that were of national importance. Further work was undertaken by ARS in areas 6 and 7 that was completed in 2017. These surveys have informed the applicant of the importance to research area 8 and MAP archaeological consultancy has been commissioned to undertake a desk top study and a WSI which are included in appendix 9 for the report dated June 2018.

12.3 A desk top study was prepared by Dr Phillip Sidebottom BA PHD AIFA dated June 2013 for the area 3, 4 and 5 sites and further desk based assessments have been undertaken for area 6 and 7 by Archaeological Research Services. The assessment has been extended to area 8 by MAP who have undertaken a desk top study and prepared a method statement for a geophysical survey and intrusive investigations of the field boundaries and crop marks in the fields which has been agreed with the NYCC Historic Environment Team representative, Peter Rowe. Based on the conclusion of the previous desk top studies and excavations the advice was to carry out an intrusive investigation of future areas of the quarry within the red line area covering area 8. The earlier investigations for the quarry between the access road and Area 8 on the north side of the B6474 have informed the consultant for the investigation of area 8. The MAP reports are included in Appendix 9.

12.4 In summary the desk top study found that there was evidence of habitation and farming practice from pre historic times through the Iron Age, Roman period to Anglo Saxon times and then to the present day.

12.5 The soils in the Permian Limestone are light loamy and drain easily and it is likely that the Castle Hill fort was a fortified farmstead on the flank of Brockdale overseeing the escarpment in the limestone country and beyond to the lower lying coal measures land. The fort was on a promontory so would be easily defended from the south.

12.6 The area has evidence of farming practice dating back to prehistoric times due to the Humber levels to the east being peat moorland, bog and wetland that was not

drained until the early 18th century apart from some earlier drainage in Roman times. To the immediate west is the lower lying exposed coalfield which has heavier clay soil not favoured by the early farmers.

12.7 The area also provided freestone for building stockades and farm buildings and village settlements as the valleys were steeply sided with woodland and flat common grazing land that was felled for field enclosures.

12.8 Pre farming communities, 8000 BC were non-sedentary and followed migrating herd of animals so evidence of permanent structures is rare and most artefacts are related to hunting tools. Early evidence at Creswell in Nottinghamshire has found settlements in caves in the steep sided limestone valley and rock shelters in the Middle and Upper Palaeolithic period. It is conceivable that Brockadale plantation with its steep sided valley was used for the same method of trapping and hunting.

12.9 During the Mesolithic Period 8000 to 3500 BC there seems to be a change from rock shelters to a more ubiquitous presence in the limestone region as a whole but such evidence of tools and flints is absent in the immediate area under consideration.

12.10 The first farming communities were from the Neolithic period 3500 to 1800 BC and they preferred lighter soils similar to those found throughout the exposed Permian Limestone belt in North Yorkshire to Nottinghamshire. The farmsteads were limited in their area as to the west was the heavier clay soil of the coal measures strata or till associated with lowland heath, peat bog and wetland of the Humber Estuary.

12.11 During the Bronze Age 1800 to 800 BC farming activity expanded to encompass the heavier types of clay soil and woodland was felled to provide field enclosures. On the Magnesium Limestone 10 kms to the north of the Went Edge site, between Ferry Fryston and Ferry Bridge, where the River Aire cuts through the Permian Limestone there is evidence of barrow burials, a henge and field systems which may have been a major area of farming and habitation. Bronze Age pottery and field enclosures have been found with crop marks and pit alignments indicating settlements.

12.12 There seems to have been some continuity from the Bronze Age to the Iron Age period 800 BC to AD 50 as Iron Age and Romano British Sites have earlier evidence of Bronze Age settlements. The paucity of information from the Iron Age period and dateable evidence makes the period of activity uncertain but the Permian soil is likely to have been a focus for farming activity. One feature of Iron Age development was fortified settlements and the Caste Hill earthwork at Went Edge was one such fortification. The Caste Hill Earthwork was included in the 1947 planning permission area to continue quarrying at Smeaton Limeworks and it is likely the earthwork was destroyed when the quarry was worked in the northwest corner and then the boundary land used for the works as a tip during the 1950's.

12.13 Crop marks are evident in the Permian Limestone areas and there are crop marks in the south west corner of area 5 by the entrance to the quarry and on the opposite

side of Went Edge Road B6474. This could be proof of the settlement in the area and it is likely to have continued through to the Roman period as most are undated. There was an expansion of farming as there is evidence of crop marks on the exposed coal measures to the west of the Permian escarpment. These areas have been excavated as part of the archaeological work on the site for the extensions into Area 5, 6 & 7. Field boundaries have been identified in the MAP Desk Top Report and the WSI in figure 2 so there will be some intrusive investigation if planning permission is granted. If planning permission is refused then there would be no further work as the site would remain in agricultural use.

12.14 It is recorded that the area was under the control of the Brigantes as the Romans ventured north in AD57 and there was a Roman fort at Danum (Doncaster) and one Lagentium (Castleford). There is also a note that Roman remains have been found at Hampole in Hazel Lane Quarry including a tiled floor and hearths. The main forts were adjacent to the old route of the A1 which is a Roman military road and it seems that settlements were close by to the road.

12.15 There are a small number of villa sites in the region one of which is the Hazel Lane site and remains of habitation have been found there and at Darrington Quarry. Farming seems to have been by native British farmers supplying food to the Romans in the area and was intensive.

12.16 Post Roman period AD400 to AD650 was known as the Dark Ages as there is little historical record of activity. Bede wrote a history of the area in AD 800 and it seems the area was on the boundary of two kingdoms, the British kingdom of Elmet situated to the west and north of the site and Deira towards the Vale of York in the east which was Anglo Saxon.

12.17 Anglo Saxon settlement has been found at Collingham, Pontefract and Ferry Fryston alongside the Great North Road and it is likely the Anglo Saxons farmed the light loamy soil of the exposed Permian Limestone belt. Their pottery is not as durable as the Roman so few remains have been found.

12.18 The Scandinavian settlement left little in the way of evidence and reliance is left to place names such as “Thorpe or By “ which are not common in the area. It is likely their influence did not extend into this area. Kirk Smeaton is differentiated from Smeaton and is probably a later addition due to the Church.

12.19 The medieval period from 1086 to 1550 saw the settlement of villages and towns with open fields in strip patterns for the nearby residents and farmers to cultivate and the open pasture used for livestock. Smeaton seems to be a sizeable village with a smith, ploughing teams, a mill and a Church. The name can be derived from Smithstown.

12.20 Land was under greater control through Church and Monasteries to provide food and income for the Monks.

12.21 With the dissolution of the Monasteries secular landlords became common and they became the Lord of the Manor. The farmers paid tithes and provided food and goods to the Lord of the Manor and there were large houses with gardens and parks for hunting by the Lord such as Stapleton Park to the north.

12.22 Farming remained the same in the area with small industry in the areas to the west where there were coal mines and iron workings from 1600. The farms were in open fields on the strip system and open land for common use. With the introduction of the Inclosure Awards from 1750 to 1870 land was enclosed with hedges, walls and roads and the fields were given names or numbers by the surveyor for the Award and the map. The enclosures usually followed the field patterns that the tenant farmers had in the Manor.

12.23 Industrialisation continued through the 1770's to the First World War on the exposed coalfield to the west as the coal worked provided power for the industries making steel, manufacturing goods, textile mills and heavy industry. The farming industry remained the same in the area with long field enclosures until the mechanisation of the industry in the early 1940's.

12.24 The area around Went Edge Quarry was enclosed and the field pattern was long strips running north south from Went Edge Road. There has been successive ploughing and cultivation on the land which could have destroyed any archaeological remains unless they were deeper down in the soil. The area has been investigated for the Agricultural Land Classification (ALC) survey and the topsoil depths have been found to be between 200 and 300 mm thick with between 0 and 380 mm of subsoil to the limestone rock head.

12.25 It is likely due to modern ploughing where the depth of the tyne is more than 300 mm then the soil will have been turned over and artefacts destroyed unless they were small enough to be pushed aside and turned over. Early ploughing will not have been as deep and there is the possibility that some areas could have been pasture.

12.26 There are crop marks or field boundaries in area 8 some of which are not within the extraction area as the marks are in the area where soil will be stored and extend over Went Edge Road and appears to be part of the larger area of crop marks from drains, ditches , tracks and enclosures for farmsteads. The date seems to be Bronze or Iron Age and a Bronze Age brooch was found at Little Smeaton.

12.27 The North Yorkshire Historic Environment Record and the National Monuments Record for the areas out with of the County have been looked at and four records were within the quarry area now being worked and other records are in the fields to the east, mainly crop marks.

12.28 In 2002 as part of the extension of the quarry to the east into the field that is part of Area 3 and north of that extension to the quarry a geophysical survey and trial trenching undertaken in what is planning permission number C8/45/13P/PA. The

survey found post holes and ditches leading to the conclusion it was a stockade remote from settlements.

12.29 There are no records of finds in the field where the extension into Area 4 was to be from Area 3. Area 3 was subject to a desk top study and intrusive investigation with a watching brief as the topsoil was removed from site. Area 4 and 5 were also subject to a trench survey and the crop marks and old boundaries of the fields investigated. No artefacts were found in area 5 and the report was provided to NYCC and included in appendix 9 of the ES for planning permission NY/2016/0185/ENV.

12.30 A desk top study has been completed by MAP for area 8 in June 2018 and they recommend a geophysical survey which will be carried out in spring of 2020 before any further recommendations are given. At the time Area 3 and 4 were being considered for working aerial photographs were inspected at North Yorkshire Archaeology Service and no features were found in the area of the extension in Area 3 or Area 4. Crop marks were noted to the west in area 5 and east of the site in area 8, refer to page 15 of the Sidebottom report and already recorded in the historic record. The archaeological report has been updated with the desk based assessment by MAP in July 2018 and there is interest in the field that requires further investigation.

12.31 Further investigation at the NMR in Swindon revealed crop marks in the area of the extension and over 175 photographs were looked at for the whole of the quarry area to provide a good understanding of the wider area. Two oblique photographs from 1983 showed crop marks in the field to the south and in the south west of the area 5 field near the industrial estate access road.

12.32 The crop marks could be ditches and enclosures from a farmstead and they are located inside the application area for mineral extraction. The field is currently farmed for cereals and within the next 12 months an archaeological investigation will take place on the site to assess the significance of the marks in the soil if planning permission is granted.

12.33 The conclusion of the desk top study was that there was potential for archaeological interest with crop marks indicating early farming enclosures and investigation is recommended in the area.

12.34 In October 2011 an intrusive investigation took place in area 3 and from the geophysical survey there was targeted trial pits and trenches to assess the crop marks seen in the area 3 field. Despite the owner suggesting the marks were due to modern uses such as grass tracking and traversing plant across the site in 2003 to 2006 when there was an access road in the east side of the quarry the pits were excavated after the geophysical survey. The reports were provided with the planning application NY2010/0158/FUL. Further work was undertaken in area 4 and area 5 to carry out geophysical surveys and trench pits to investigate the crop marks. Further

investigations have been undertaken in area 6 and 7 and the reports provided to the Heritage Team to provide an overall understanding of the archaeology.

12.35 There has been a comprehensive archaeological investigation of the quarry site over a period of 10 years and apart from some pieces of pottery and a brooch the main findings have been field enclosures, ditches and fissures filled with soil.

12.36 In conclusion the desk top report and WSI prepared by MAP for the area 8 field shows crop marks and field boundaries parallel and perpendicular to Went Edge Road which is known to be an enclosure road for the Manor so will have dictated the pattern of the fields as they were laid out by the surveyor.

12.37 These field boundaries are from the inclosure of the fields under the manorial rights and were old hedgerows pulled out some 70 years ago in the quest for more food production during and after the Second World War.

12.38 The extension of the mineral extraction area to the east of the existing quarry by 500 metres will not affect the archaeological interest as it will be investigated over a short period of time as the phases are being marked out for working to record the farming use. The Council have been provided with the information and all the interest has been recorded since the quarry expanded away from the ROMP area and the planning permissions granted in 2002 into area 3, 4, 5, 6 and 7 since 2010. A comprehensive archaeological survey has found 2 artefacts on site.

12.39 Map will undertake the site investigation in each phase as it becomes available. It is proposed to begin with an investigation with trenching in an area 150 metres long and 30 metres wide in area 8 A to complete that section so quarrying can continue and the archaeological work can move to the second area of 30 metres wide strip iin area 8 A to be out of the way of the quarrying activity.

13.0 Agricultural Land Classification.

13.1 An agricultural land classification survey was undertaken to assess the grade of the land around the quarry and also consider the area of the field in area 8 as well as the quarry areas which are now areas 6 and 7 in relation to the effect on the local farms and the loss of the land which due to the location is classed as best and most versatile. The survey was extended to area 8 on the east side quarry for the safeguarded area of limestone resource to assess the impact on the grade 2 and 3 land.

13.2 Land and Restoration Management Limited investigated the field and took samples of soil, recorded the depth of soils on the field and mapped the area to classify the land in grade for area 5. The land is found to be grade 2 over the mineral extraction area and most of the field apart from an area near the access road into the estate where it is grade 3B. The technical report is included in appendix 10.

13.3 The majority of the field, the central and eastern section has a topsoil thickness of 280 mm over 260 mm of subsoil, whilst at the west side of the field there is 240 mm of topsoil on weathered limestone rock head.

13.4 The soil is a granular light loamy well drained clayey topsoil and is classed as Type - Aberford 511 a. Beneath the topsoil over an area of 3 hectares is a subsoil which is described as no stones to slightly stoney with small limestone fragments, medium textured consisting of clay, typical of weathered soil over limestone. The thickness is between 240 mm and 320 mm.

13.5 The soil is classed as best and most versatile and it is clear from the archaeology surveys in the area that the field has been farmed for over hundreds of years primarily due to the lightness of the soil and the ease of ploughing. The Permian soils are well drained and can be considered to be dry so are more suitable for cereal and rape crop than vegetables which usually require more moisture retention in the soil.

13.6 The advice offered by Natural England for previous extension areas has been considered in the survey and 6 auger borings were taken on the field in area 8 and the soil beds that have been exposed in areas 3 and 4 were inspected at the side of the quarry face soil strip. The weather was dry and had been for 3 days on the 4th August 2016.

13.7 The field was mapped out with a grid of 100 metres by 100 metres and this provided an area of approximately 9.7 hectares in which bores numbered 5 to 15 were taken, refer to the sample location map in appendix 1 of the ALC report in appendix 10. The borings confirmed the two soil types, one of topsoil over the limestone and to the central and eastern section of the field a layer of subsoil beneath the topsoil.

13.8 Soils were sampled and found to be naturally elevated in lime content with a pH of 6.8 to 8.4 with the exception of Auger Point 5 which had a pH of 5.3. Soils should be a near to neutral, pH of 6.5 as possible to maintain a good sward as nutrients are more bio accessible and it improves crumb structure to aid drainage. A slightly acid soil is considered best for a wide range of crops but the limestone soils are used for cereals and legumes.

13.9 The advice from Natural England in their response to the scoping exercise for area 4, dated 16th December 2013 and area 5 dated the 19th January 2016 has been noted and the ALC survey was carried out as NE required for area 8 and the area mapped to provide the areas of soil classification from the existing quarry to the access road.

13.10 The soil storage for area 8 is within Grade 2 land due to the subsoil beneath the topsoil. There is 280mm of topsoil over 280 mm of subsoil. The mineral extraction area and the location of the soil storage for area 8 is 8.6 hectares out of 9.7 hectares which has been assessed as grade 3B, refer to appendix 3 in the ALC. With there being 8.6 hectares for area 8 of soil strip the volumes available in each phase will be stored in two separate heaps to a height of 2.5 metres with shallow gradients so the inner core of the soil heap does not become anaerobic. The topsoil will be stored alongside the boundary of the site with Went Edge Road as shown on the working plans in appendix 2 and the subsoil will be stored inside the topsoil bund to provide a higher screen mound. Part of Area 8 is grade 2 on the southern part of the field near the road and to the north is grade 3B land as there is little subsoil thickness over the limestone. The topsoil will be lifted and stored in the same heap as there is no difference in the texture and nutrient of the topsoil.

13.11 There are 21,750 cubic metres of topsoil to move and store in area 8. The soil will be moved in phases 30 metres in advance of the limestone extraction each of 7,000 cubic metres and stored on the south side of the area 8 extension. Refer to plan numbers WEQ/AR08/PA-05 to 08 that shows the topsoil placed in the screen mound parallel to Went Edge Road inside the bund placed for tree planting to screen area 8.

13.12 The subsoil will be lifted and placed in a screen mound on the south side and a smattering of topsoil and subsoil contact soil will be placed over the slope to provide a medium for grass growth. The volume of subsoil is 8.6 hectares by 0.05 of a metre which is 4,350 cubic metres. The subsoil will not be stripped under the footprint of the subsoil screen mound in the standoff.

13.13 The soil on area 6 has been stored around the perimeter of the site to afford screening of the workings. The soil will be retained at area 6 for subsequent restoration of the field to arable use. Area 7 has been stripped of soils and the volume of soil is 5,600 cubic metres of topsoil which has been used on the east side screen mound and on the south side before 6200 cubic metres of subsoil was stored.

13.14 The soil will not be lost as it is placed in stockpiles of the different types to be used in the restoration of the site. The proposal for the restoration of the quarry is to place fill

against the faces of the areas worked out to provide a slope and then a plateau back to the face. Limestone dust and soil will be required for the calcareous grassland to provide an extended habitat to the SSSI. The soil will not be used in the area where there is to be nutrient poor soil so it will have to be used in the landscaping for the industrial estate in the base of the quarry or for areas of woodland.

13.15 The longer term proposal for the site was to continue to work to the east in area 8 to extract limestone in the safeguarded area. As the quarry currently has a standoff from Went Edge Road of 30 metres and this proposal looks to continue that width of standoff from the boundary with Went Edge Road as part of the extraction area the void could be filled in to the surface to provide a plateau area of between 100 metres and 150 metres from the east side boundary as shown on plan number 10 in appendix 2. That would depend upon the volumes of construction material available in the region within 30 miles of the site. The restoration of phase 8 C1 is flexible as quarry fines could be used for the plateau. There are soil stores available on the site to upgrade restored land in area 6 and other parts of the quarry to grade 2 by adding a layer of subsoil before laying topsoil.

13.16 There has been some programming of the quarry working to widen the footprint of the quarry for the relocation of the industrial estate, provide topsoil and subsoil storage, prepare the restoration plan of the area in the existing quarry, and carry out an audit of what material will be required for the slopes and infilling to the surface on the south side. This planning to include the tenants at the industrial estate has taken 3 years to complete and the quarry is now ready to move into the reserves to the east as there are areas in the base of the quarry that are now large enough for the industrial estate and the waste management operation without impinging on the quarry work .

13.17 The soil resource will not be lost or cross contaminated and the locations of the types of soil and the volumes will be provided to the Minerals Planning Authority.

13.18 Areas 6, 7 and 8 have been surveyed for the ALC in August 2016 to assess the soil thickness and the grade of the land. Area 6 was found to be grade 2 land to the south of the site near to the B6474 and grade 3b to the north near to Swales Plantation. Area 7 has found to be grade 2 land and to the north of the field is grade 3b. In area 8 the south side where the soil storage will be in the standoff is grade 2 and to the north in the mineral extraction area is grade 3B. The volumes removed from the working areas 3, 4, 5, 6 & 7 have been measured and correlate with the volumes assessed in the ALC samples.

13.19 Area 6 will be restored to the surface and the land brought back into agricultural use as grade 2 land. Area 7 and 8 will be restored at a lower level restoration and there will be a plateau on the eastern edge of area 8 to provide support for the powerline. The subsoil and topsoil will be stored around the periphery of the site and then spread over the restored areas that have been brought back to surface level to recreate the grade of at least 3 b and if possible grade 2.

14.0 Conclusions of the Impact Assessment on the Environment and Amenity from the Proposed Extension to the Quarry and the Current Operations on the site at Smeaton Industrial Estate.

14.1 The proposed 9.7 hectare extension to the east side of the quarry for area 8 and has been assessed against the current operations which have been used as the base line for the impact on the SSSI, the road network, the agricultural land, viability of the farm business, local receptors in the villages and the users of the public footpaths. The extension to the east of 8.6 hectares of mineral extraction from 9.7 hectares of operational land has been assessed against the base line of working area 3 to 7 from July 201 to December 2018. The loss of 9.7 hectares of land that was in the ownership of Mr Elwess as it is used for soil storage and limestone extraction in three phases with restoration to tree planting to screen the workings and calcareous grassland will provide an enhanced habitat when compared with the monoculture of the field.

14.2 The biodiversity in the phased restoration concept for the quarry to enhance the nearby Brockadale Plantation in an area of intensive farming has been assessed against the increase in a diverse habitat connected to the Brockadale and Sayles Plantations. The relocation of the industrial estate to the bottom of the quarry within the Green Belt has been considered as a very beneficial objective that has been completed by the applicant company. The proposal means the loss of 8.6 hectares of grade 3 b land alongside Brockadale Plantation and the SSSI. The benefit will be the creation of a diverse habitat, to compliment the SSSI and the wider habitat along the Went Valley in an area of intensive arable farming.

14.3 Consultants have been engaged who are experts in their respective fields by the applicant Went Valley Aggregates and Recycling Limited along with the estate owners Meakin Properties, and each one has considered the statutory consultees responses to the request for a scoping opinion for area 5, 6 and 7 sent to the Minerals Planning Authority at North Yorkshire County Council by the applicant's agent. The agent requested a screening opinion for Area 5, 6 and 7 and the MPA confirmed that an ES was required to accompany the application to work extension areas. As the area 8 application is the same size as the areas 5, 6 and 7 site the agent has screened and scoped the proposal under the 2017 regulations and the application is accompanied by and Environmental Statement based on the consultees advice and responses to planning application NY/2016/0185/ENV. The previous ES did consider the future working of the site with a global excavation plan and restoration scheme to a low level. The scope for the Environmental Statement provided for Area 5, 6 and 7 has been considered by each consultant for this application and the ecology, landscape and visual impact, restoration and aftercare, stability risk assessment, the hydrogeology and the working programme have been updated to reflect working the reserves in area 8 to the east of the exiting quarry. The

team worked on the previous applications at the quarry and have reviewed all the advice and consultations from NYCC included in appendix 1 as the definitive base line for information to be provided for this application and Environmental Statement.

14.3 The technical reports that have been produced by the consultants / experts are included in volume 2 of the Environmental Statement and the contents of each report has been analysed and reviewed to prepare this statement and to cross reference work from each report to fully describe the environment and the habitat so that the impact from quarrying can be assessed. For example the ALC has been used to cross reference the Ecology report to assess the soil types and disturbance in area 8. The ALC survey of the soils has been used with the desk based assessment by MAP on the archaeology to inform the investigation on the field and the geophysical survey. The length of time the fields have been cultivated has been considered for the ALC from the desk top study in the Archaeological Section.

14.4 The thickness of soil types have been used to calculate the volumes of soil to be stripped and the storage to inform the design for mineral extraction and the soil bunds and screening. The screening and volumes of soil have informed the Landscape Architect on the height and width of the soil mounds for tree planting and mitigation of the visual impact. From the design the LVIA and the ecology survey have considered the offsite landscaping and creation of habitat. 14.4 The landscape and visual impact assessment has driven the design of the quarry and the soil bund screening, hedgerow and tree planting so that the soil can be used in the most sustainable manner and can be retrieved in the future for restoration. The ALC has assisted in that design work due to the types of soil identified and depths. The design work can incorporate two locations for topsoil and subsoil. The topsoil can be placed and not disturbed again until required. The subsoil heaps can be moved again in the future to the base of the quarry to be used in the restoration and any excess of soil can be exported to restore and remediate other brownfield sites.

14.5 The landscape architect and the ecologist have worked with the mining engineer to work up the design of the restoration so that the >30 metre high faces have material placed against them to prevent the risk of rock fall and instability when quarrying in a particular area has been completed, for instance along the southern limit of extraction 30 metres from the site boundary. The face is worked the full depth of the limestone and then filled against with material to build a buttress slope. The slopes are shaped up to provide plateaux and scree for woodland planting, calcareous grassland and damp shaded areas for habitat. There will be areas of open limestone crag and material placed to the surface to provide a connection for fauna to inhabit the plateau.

14.6 The noise and air quality reports have been updated for the area 8 extraction in the design of the extension and the future working phases of the site to attenuate noise and reduce the potential for dust blow from the site. The soil mounds are placed around the extraction area to baffle noise whilst working near the surface, shelter the bare limestone from wind until the weathered limestone is worked rock head at the lower level 3.5 metres from the surface and most of the excavation is below ground to

reduce the risk of entrained dust spreading to the SSSI and the flora in the area between the quarry and the valley side.

14.7 The traffic statement has concluded that if the activity at the quarry remains as it is subject to normal market fluctuations and there is no intention to increase production over and above what has been normal over the past 20 years then the traffic movements of 200 per day are unlikely to cause any safety or capacity issues now or in 10 years' time. The road is suitable to allow Heavy Goods Vehicles to leave site and travel west to the A1. The access is to a modern standard and sealed which makes cleaning and controlling and mud and dust easier with the company's own road sweeper. There is a powered wheel wash at the site to maintain clean HGV's in periods of wet weather.

14.8 The noise assessment has measured the sound power levels of the machines on site, the noise levels at the boundary of the quarry and at the nearest noise sensitive receptor whilst mineral was being excavated on the west side of the quarry which is the nearest point to the houses on Jackson's Lane to the north west across the Brockadale Valley. The noise report found that traffic noise from the A1 was prevalent in the village of Wentbridge in periods of low noise such as Saturday morning and midweek evenings. The quarry noise was baffled by the quarry faces, trees, soil mounds around the site, the distance to the houses on Jackson's Lane and the topography. There were no issues with noise emissions either to the north of the site or towards the village of Kirk Smeaton and the levels at the boundary of the site complied with the levels set in the planning permissions for the quarry.

14.9 Vibration from the machines on site to receptors is negligible due to the depth of the limestone and the distance of the working platforms in the quarry to the occupiers of the industrial estate and offices. The vibration of machines tracking over the limestone or when material is being tipped and compacted is negligible unless the person is stood within 3 to 5 metres of the machine. When travelling over soil or fill then tracks are cushioned. The haul roads are sealed and drained into the quarry and are in good condition with no potholes. The internal haul roads are on rock head or compacted material and are in good condition as they are dressed up regularly so there are no bangs and clatter from machines or trucks driving around in the quarry to cause vibration. The quarry blasts stone once a week to provide 25,000 tonnes of stone and the face is drilled the full section of the limestone beds to 20 metres aod. The blasts are designed to loosen the maximum amount of rock with the least amount of explosive and this is achieved by designing the delay of each shot, the distance from the face, the spacing of the holes and the amount of stemming and the location of the ANFO in the hole. The blasts were monitored when near to the receptors on Jackson's Lane, the northwest side of the quarry but now all mineral extraction has ceased in this area and all of the quarrying will be on the east side in area 8 and then for the next 6 to 8 years. The Peak Particle Velocity measured at the office and weighbridge when a blast took place east of the former surface industrial estate was less that 4 mm/s so the blast vibrations are in compliance with the planning permissions and also do not affect the residents or the fauna in the

plantation. The blasts are initiated when there is the least risk of air overpressure as the weather conditions are monitored on a 3 day basis to forward plan the blast and the dust management.

14.10 Air quality was not affected locally by PM_{10} particulates from the quarry and whilst there is likely to be a very localised increase in those particulates due to the A1 it has not been measured. Most quarries emit dust of particulate sizes ranging from 30 micron to 70 micron and dust emissions do not travel further than 200 metres usually. Research on dust emissions from quarries and opencast mines has found that the dust is mainly a nuisance now known as dis-amenity such as coating surfaces and blowing about on roads as vehicles pass. Good management of the causes of dust can reduce the risk of emissions leaving site and coating off site areas. DustScanAQ have been furnished with the design of the quarry and have visited the site to inspect the operations to provide a robust air quality assessment in line with the latest guidance and advice from the Environmental Health Officer at Selby Council.

14.11 The ecology report recognised that coating plant life could present a problem in the habitat to the north and north east of the prevailing wind direction but noted that the winds are usually bringing showers off the Atlantic so the dust if deposited would be washed off. The machines are well maintained with upward facing exhausts and the haul roads at the surface and in the quarry are damped down in periods of dry weather. The processing plant has spray bars to damp down the stone as it travels on the conveyors and screens. Drop points are covered with cowls. The drill rig has a cowl over the drill string and a dust extractor on the side of the machine to eliminate dust emissions from the outside air. The quarry poses a low risk of dust emissions from the site based on the current management procedures, the wheel wash and the sweeper. The air quality and dust management for the site in dry weather has been considered by DustScanAQ Limited again on behalf of the client for area 8 after looking at the potential for dust blow and air quality issues in June 2015. They have been able to assess their management advice on reducing dust over the past 3 years and it is relevant to area 8. The advice in the report has been introduced whilst working areas 5, 6 and 7.

14.12 The stability of the land is not an issue as the limestone deposit is 30 metres thick and the structure is consistent throughout the area. The limestone in area is less affected by the water dissolution and fissures, vein mineralization and sink holes found near to Brockadale and the River Went in the ROMP area. The face is being driven eastward in area 7 towards area 8 across the joint set orientation and the dip of the structure is in to the face so the stability is inherent as joints lock the beds in until it is drilled and blasted when the rock falls away from the face on the joints. The east side of the quarry has some overhangs and these are cleaned down by the long reach excavator off the blast pile. In area 8 the weathered limestone and flaggy limestone where these overhangs exist is in the first 3.5 metres above a thin < 200 mm clay bed and it is going to be excavated in advance of the competent beds of limestone that will be drilled. The weathered limestone will be passed into the quarry for processing onto the blast pile. The face length is long enough in the north south

orientation to have drilling in the first section, blasting in the second section and loading in the third section each of 50 metres long with buffer zones that can alternate about the face.

14.13 Material will be placed against the face once the limestone has been extracted in area 8 which has been the case in areas 3, 4 and 5. This will provide slopes for the restoration scheme and reduce the risk of roll if rocks fall from the face.

14.14 The water quality and groundwater have been considered and a site investigation in the base of the quarry in 2006 revealed that the limestone extends to 20 metres aod with a red marl bed some 2 metres thick over a mudstone bed beneath it. The groundwater was measured at a level of 12 metres to 14 metres aod which is below the bed of the River Went. The groundwater was in the Ackworth Rock which outcrops to the west on the lower lying land around Wentbridge and is recharged in that exposure area. The Ackworth rock is covered with 6 metres of impermeable clay material which from tests elsewhere on the marl has a coefficient of permeability of at least $1x10^{-8}$ metres per second. The argillaceous mudstone has a similar property. The limestone beds dip shallow to the south east at 6 degrees and the strike is to the north east. The quarry is dry and there is no water body in the Permian limestone due to the proximity of the escarpment and the valley.

14.15 Rainwater falling on the quarry and field will percolate to the base of the limestone through the tight joint sets and fissures to rest on the marl. The quarry floor at the present time is between 3 metres and 6 metres above the marl and is covered with a thin veneer of compacted fines which has sealed the quarry floor so water ponds in the quarry to a depth of 30 mm and then evaporates or runs to low lying parts of the quarry floor. The river is not fed by water issues from the quarry and is mainly fed by surface water runoff from the coal measures area to the northwest around Ackworth. The water quality has improved over the past 20 years as the quarry has been working near to the crest of the valley so the conclusion of the impact assessment is the activities are having no effect on the River Went or the groundwater. There are no other watercourses nearby due to the limestone plateau and whilst the strata is classified as a principal aquifer there are no water resources within 1 kilometre of the site and the limestone is dry in the area.

14.16 Ecology has been investigated by MRB Ecology and they have considered the past records of the SSSI and the surveys undertaken from 1972 to the present day to assess the base line habitat, the nationally important species and the local biodiversity recorded by the Yorkshire Wildlife Trust in the nature reserve that forms part of the Plantation SSSI. The water quality has been assessed, the flora and fauna near the valley bottom, the limestone crags, the boundary of the SSSI with the northern part of the quarry and the arable farmland nearby and within the field to the east and the plantation. The application area is within Grade 2 and 3b arable farmland and presents a mono culture unless left to stubble between harvest and ploughing. It is common for the crop to be lifted and then the field ploughed within 2

weeks of the completion of harvest and collection of the straw bales so the fields no longer provide a food source over the winter.

14.17 In comparison the quarry perimeter is unkempt so ruderals and hedges provide food and shelter for fauna in the area. The current area proposed for mineral extraction has been left over winter and provided feeding areas for birds and foraging fauna. The quarry has provided a mosaic of un kempt land which has a variety of habitats of ruderals, margin grassland, shelter belts of trees along side the industrial estate and new habitat from tree planting and hedge lines. The ecology surveys have been undertaken in August 2013, March 2015, August 2015, March 2016, June 2016 and June 2018 providing an accurate representation of the different types of habitat at the site that extends the area of woodland and pasture at Brockadale Plantation and Sayles Wood.

14.18 The ecologist has worked closely with the mining engineer and the landscape architect to design a restoration scheme that will complement the habitat found at the SSSI and on the margins of the quarry. The ecology survey highlighted the possibility of broken pathways for fauna to forage in the area and the isolated bird breeding areas in the estate shelter belt and tree screen that has been removed. The restoration scheme has provided for a diverse habitat of unmanaged grassland regenerated in parts of the quarry land not used, the provision of exposed limestone faces to add to the crags in the valley, slopes to the base of the quarry with material tipped near the surface to maintain routes for foraging and migratory pathways, plateau and undulating land on both north and south facing faces to provide a damp and shaded environment. Tree planting will be added to the slopes to extend the woodland habitat.

14.19 The soil profile has been considered preserving the finer fraction of limestone dust for soil making material to cover the slopes and provide calcareous grassland. Scree has been included on the shallower slopes to provide habitat for reptiles and invertebrates. The site has been walked over and a full inventory of the flora and fauna recorded to provide the baseline information for designing the restoration of the site and the whole quarry. From the plethora of available information the area has not been affected the quarry environment as the condition of the SSSI has not diminished due to the proximity of the working area on the north side. The extension to the quarry is to the east in the arable farmland and it will provide a beneficial use of the land in terms of biodiversity and landscape. The soils will be stored on site for future use in the restoration of area 6 to arable use and for the base of the quarry to provide some soil for restoration which is likely to include some infilling of the land near to Went Edge Road to achieve compaction in the future so the topsoil and subsoil can be used in areas of grassland. Whilst the quarry is working the standoff from Went Edge Road is bounded by hedges and trees and the field within the standoff will be ploughed and seeded with the grass mix suitable for low maintenance and wild flowers together with the woodland and soil storage. The quarry working is beneficial to the overall habitat and will provide a larger area for the nationally important species in the SSSI and a varied mosaic on the restored areas.

14.20 The landscape and visual impact assessment has noted the advice provided by the County Council's Principal Landscape Officer and provided the detail on the cumulative impact of the other quarries, the power stations and the pylons in the limestone ridge country. The character has been assessed from a number of viewpoints and the landscape architect has extended the area of the survey to the A1, the east side public footpath number 35 and south to Barnsdale Bar some 4 kilometres south of the site. The survey is an extension of the LVIA undertaken for Areas 5, 6 and 7 and the planting scheme provided for those planning permissions to provide forward planting alongside the boundaries of the quarry and fields to be worked.

14.21 The operations at the quarry have been assessed in particular working near the surface and drilling the blast holes. Noise and dust emissions have been considered with the mining engineer to incorporate shelter and attenuation of noise emissions through the landscape screening of the quarry on the east side as the land falls slightly from 56 metres aod to 44 metres aod near the site boundary with the powerline.

14.22 The mining engineer, ecologist and landscape architect have worked together with the County Landscape Officer and the County Ecologist for the previous applications to provide a restoration scheme that provides for a programmed deposit of mining waste and residues from the inert waste processing area in the base of the quarry to recover that waste for use in the slopes against the face.

14.23 This method of restoration and management has been carried through or area 8 over three phases of working. The restoration area as it is being engineered into the toe of the face will act as a rock fall zone and support the face in the long term as it will cover fissures and dilated joint sets that could cause rock fall. The slope will be shaped up and shallower slopes and plateau provided to allow different habitat to form in the restored quarry.

14.24 The landscape and visual impact assessment has concluded that whilst the quarry is working the visual impact will be minor adverse and as restoration is completed in section the overall character will be beneficial to the area. The quarry cannot be seen in the landscape due to the thickness of the limestone deposit and the working scheme to work the stone from the base of the quarry. The future plan of working the stone in fields has been mitigated by the planting of tree belts, new hedgerows and filling off site hedgerows in advance of further mineral extraction. The relocation of the industrial estate to the base of the quarry by mid-2017 has been beneficial to the area by removing an industrial use from the open landscape in the Green Belt even though it was there for over 75 years. The proposal of enlarging the quarry with landscaping has been beneficial to the landscape and visual amenity of the area as it has provided the funds and the area for relocating the industrial estate and screening the operation from the wider views.

14.25 The archaeology of the site in area 8 has been ascertained by means of a desk top study using the other reports on area that are now being quarried and geophysical surveys using a magnetometer to detect anomalies. This has informed MAP on what they can expect to achieve using the same techniques on area 8. The archaeology survey can be correlated to the desk top report on early inclosure and the ALC due to the soil depths found in the auger holes. The magnetometer is able to map changes in the Earth's magnetic field in shallow soils down to 1 metre. The rock head on the site has been found to be less than 0.7 metres below the surface so the anomalies mapped in the field will represent an accurate map of the field boundaries and possibly earlier Iron Age farm enclosures. The earlier crop marks that are shown north of Went Edge Road could be fissures and sink holes in the limestone filled with soil but this will be investigated in due course as it is within the mineral extraction area and based on the previous findings should not prevent the extension to the mineral extraction area.

14.26 The adjacent areas 3, 4, 5, 6 and 7 were investigated and the archaeology has been recorded through a systematic survey using non-intrusive methods, targeted excavations to assess the anomaly and reports provided to the County Archaeologist. There has been a watching brief as each phase of soil stripping and parts where soil has been stored. The extension to the quarry will not affect the archaeological interest in the area once the field has been trenched and the enclosure lines noted and may provide the opportunity to obtain more accurate data on the farming practices of the land in area 8 from the Iron Age to the present day.

14.27 The agricultural land classification survey has found two types of soil on the field. On the southern third of the field the classification is 2 because there is 240 mm of topsoil and 280 mm of subsoil. The soil type is Aberford 511a which is described as a loam with a slightly stoney limestone fragments in the subsoil. It is a medium texture consisting of clay and crumbly, well drained and light for cultivation. To the north two thirds of the area which corresponds with the extraction in the quarry the soil is topsoil over limestone and is 240 mm thick. The soil area is classed as 3B due to the lack of subsoil. The land is called as best and most versatile but is mainly used for cereal and rape seed as vegetables tend to prefer moisture retaining soil as found on the coal measures strata to the west of the escarpment. The advice offered by Natural England in their consultation response dated 16th December 2013 and 19th January 2016 has been on area 5, 6, 7 and the field to the east which is now area 8. The soils are naturally elevated in lime content being on the Permian limestone. The ALC report provides plans of the area where the Grade 3B soils are

14.28 The mining engineer and landscape architect have worked with the soil consultant LRM to design the soil strip so the topsoil and subsoil are stored in separate locations and the topsoil can be placed in a small bund alongside Went Edge Road next to the new plantation of trees. The subsoil will be used for screening the area 8 working in phase A to C1. In future the soil will require stripping when there is further limestone extraction and the soil classification survey will be used to store the soil for subsequent restoration use. The soil will be preserved for that use and will not be lost

as it will be audited by survey when stripped and the locations of the soil heaps provided to the MPA. The soil resource has been cross referenced with the archaeological surveys to assist in the location of the old field enclosures as they are not clear apparent on the aerial photographs inspected for the desk top study. Marks are apparent in the northern part of the field which could be either fissures in the limestone beneath or Bronze / Iron Age enclosures. The archaeology survey WSI which discusses trial trenches in area 8 has been informed by the previous excavations which found grubbed out hedgerows and some excavations for the early inclosure of the land and two artefacts.

14.29 In conclusion the Environmental Impact Assessment carried out in accordance with the Practice Guide and the 2017 Regulations has considered the operations on site and the extension to the quarry in Area 8 from Areas3, 4, 5, 6 & 7. From the technical studies and close co-operation of each expert, cross referencing each report and designing the extension to the quarry based on the findings the minor impacts have been mitigated.

14.30 The quarry will have a minor adverse impact on the visual impact but with the screen mounds and planting the quarry will not be visible. As restoration continues the impact will be minor beneficial to the visual impact and landscape and of significant benefit to the ecology and amenity. Since the industrial estate has been relocated in the base of the quarry and the limestone removed in the ROMP area the visual aspect and landscape has benefited in the Green Belt. There are no discernible impacts from the extension of the quarry workings for the further limestone extraction in the field to the east if there is a peripheral screen mounds and a planting scheme the same as agreed for the previous extension under Section 106 of the Town and Country Planning Act 1990. Area 8 is a safeguarded further reserves for this quarry in the Joint Minerals and Waste Plan for NYCC, NYMNP and the City of York Council. The quarry is included in the Preferred Options Document for the Minerals and Waste Plan so the application is in accordance with the NPPF and the MPA' s own policies on mineral extraction and provision of building stone.

Signed

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30th September 2019