

## NON TECHNICAL SUMMARY

### INTRODUCTION

#### General

1. On behalf of the Burghley House Preservation Trust Limited, The Trustees for the Will of the late 6<sup>th</sup> Marquess of Exeter and with the consent of Corus a planning application is being submitted in respect of an extension to an existing planning consent for the working of ironstone and overlying minerals near Wakerley, Northamptonshire.
2. The original planning consent for mineral working was issued on 21<sup>st</sup> November 1962 and under the provisions of the Environment Act 1995 the consent has been classified as an Active Phase 1 site. A revised scheme of working was submitted to the Northamptonshire County Council for the currently consented site in late 1997 and discussions have subsequently taken place in relation to a voluntary limit for mineral working within the extant consent area. It is now suggested that in exchange for the surrender of part of the presently permitted area an extension to the remaining workings be allowed.
3. Due to the potential size of the project an Environmental Statement has been prepared in support of the proposals and specifically in relation to the environmental impact of the development upon the locality and in particular individual residential properties and the villages of Wakerley, Harringworth and Barrowden.
4. The reason for the Environmental Statement is to present the results of a detailed assessment which has been undertaken concerning the environmental effects of the proposed development.
5. The Environmental Statement has been prepared on behalf of the landowners by specialist consultants with considerable experience in planning matters. In conjunction with the study consultations have been undertaken with representatives of the local residents and the Northamptonshire Planning Authority departments dealing with environmental planning, highways and transportation. Through communication with these bodies it has been possible to give attention to ways of minimising the effects of the proposals and to identify key areas for environmental study.
6. In the context of this proposal the areas which have initially been identified as those of importance are:
  - Landscape and visual analysis
  - Hydrogeology
  - Flood Risk
  - Highways and Traffic
  - Noise, air emissions and vibration
  - Ecology and conservation

- Archaeology
  - Rights of Way
  - Agriculture and soils
7. Each key area of study has been assessed with reference to the development proposed and considers the effect of the proposals upon the environment and any measures thought necessary to reduce or remove any adverse effects. This will include the need to monitor the site during the period of development.
  8. An additional element of the Environmental Assessment is to determine any long-term benefits to the environment as a result of the development proposals.
  9. The proposed Wakerley Quarry is located approximately 0.5 kilometres south-west of the village of Wakerley in the administrative area of Northamptonshire County Council. For reference purposes the site may be found located centrally at National Grid Ref: SP 947984 as shown on the Location Plan No. 1.
  10. The total area covered by the original consent extends to some 306 hectares whilst the total area now proposed for mineral extraction, and associated development, extends to some 117.8 hectares of land. Of this some 56.9 hectares has the benefit of approval for mineral working under the provisions of the extant planning consent whilst this application covers the proposed extension and new quarry access road being approximately 60.9 hectares in extent. The northern boundary of the site is formed by retained farmland, lying south of the village of Wakerley as indicated on the accompanying Location Plan. The western boundary is formed by farmland and the former quarried areas, the southern site boundary by retained forestry and the eastern boundary by agricultural land and forestry.
  11. The boundary of the existing permission is shown edged green on the accompanying plans the extension area forming the subject of the planning application is edged red.

### **Outline of the Project**

12. The proposals involve the extraction and transportation of limestone from the site with subsequent progressive restoration to agriculture and potential nature conservation/forestry uses at lower levels. The development of the site will incorporate a high degree of environmental screening and landscaping.
13. Paragraphs 14 to 40 give a description of the proposed development and site operations including proposed restoration and aftercare.

### **Method and Sequence of Mineral Extraction**

14. The sequence of proposed working involves the progressive removal of limestone within both the existing consented area and the proposed extension area. The mineral being extracted in a “dry state” and the general phasing of

development is shown on the detailed phasing plans, Plan No's 3 to 7.

15. It is proposed that the limestone will be removed down to the proposed limits of working, generally lying above the local water table, by a hydraulic excavator and delivered to the receiving hopper within the proposed semi-mobile mineral processing plant.
16. The proposed working depth is between approximately 5 to 20 metres and the working area is divided into five general phases of working. Working will commence at the southern end of the proposed quarry area (Phase 1) initially in a southerly direction, then change and move in a westerly direction through Phase 2. Working will then turn in a northerly direction into Phase 3 and then turn north-east moving through Phases 4 and 5. Soils and overburden stripped from the working area will be used to form peripheral screening bunds to reduce the impact of the workings upon residential properties within Wakerley and its immediate surrounds.
17. Suitable margins of support will be left at the perimeters of the excavations to ensure support to adjoining unworked land and to protect retained peripheral boundary features, hedgerows and fencing.

### **Processing Plant**

18. Prior to the marketing of the limestone from the site it will be necessary to process the raw material via the proposed mobile processing plant and ancillary services.
19. The method of plant operation will involve transportation of the "as dug" limestone by excavator/loading shovel to the receiving hopper of the processing plant which will ensure that material is fed to the processing section at an even rate. The stone will then pass via crushing equipment and over screens to produce classified grades of stone for general construction uses.
20. The mobile plant used at the site is anticipated to comprise:
  - An Excavator for removal of material from the working face
  - A Loading shovel for mineral handling purposes
21. The mobile processing plant is anticipated to comprise:
  - A Primary Mobile Crusher
  - A Secondary Impactor
  - Several Screener Units
22. It is anticipated that the finished products will be removed from the processing plant by loading shovel to nearby storage areas. As required, the stone products will then be rehandled by loading shovel on to road haulage vehicles which will be checked over a certified weighbridge within the site. Following

issue of the necessary delivery and accounting documents, the products will be transported out to the customer.

### **Office Accommodation and Weighbridge Facilities.**

23. In association with the limestone quarrying operations it is essential to provide comprehensive administration facilities and controls. These are expected to comprise a managers office, quarry weighbridge, fitters workshop and welfare facilities. The quarry weighbridge and associated control cabin are likely to be situated close to the site entrance within the northern sector of Phase 1. As working proceeds into Phase 4 and 5 these facilities may be relocated to the northern end of the site to optimise site security and reduce the haulage distances for vehicles leaving the site.
24. All operational areas of the site will be secured by suitable fencing to maintain public safety and site security.

### **Access and Traffic Movements.**

25. As indicated on the development plans the site will be provided with a well designed purpose built site access roadway which will be linked via the local road network to the A43 Road. This route has been carefully designed following discussions with the local liaison group to avoid quarry traffic travelling through the nearby villages of Wakerley, Harringworth, Laxton and Barrowden. The access, and internal site roadways, will be provided with a hard surface which will be regularly cleaned in order to ensure that soil and stone are not carried onto local roadways.
26. Dependant upon market conditions, it is considered that a standard level of output for this kind of quarry will be approximately 250,000 tonnes per annum. This level of output is considered to be appropriate for the duration of operations within the proposed development area. Accordingly, vehicle movements will be around 50 movements into and out of the site each day. A total of 100 movements or approximately 8 per hour.
27. Apart from the occasional delivery of aggregate to customers within local villages in the immediate vicinity of the quarry all traffic will leave the quarry area and proceed via the internal access road to the A43, departing via the primary road network to the customer. Having regard to the direct access onto an established primary route for heavy goods vehicles it is considered that the distribution of traffic from the site will not be problematic.

### **Hours Of Working.**

28. It is proposed that production operations be carried out at the site during the following hours:

Monday to Friday      07.00 to 19.00 hours.

Saturday                      07.00 to 14.00 hours.

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Outside these hours work would be restricted to emergency plant maintenance and for essential safety work.

### **Employment.**

29. The development is expected to employ some 6 persons at the site during the majority of the year with possible additional personnel in the summer.
30. In addition to direct employment the proposals will also create a demand for road haulage to deliver products and in this respect it is suggested that some 20 drivers will be employed on a regular daily basis depending upon site output. The operation will give rise to further employment in the use of local services to supply the needs of the quarry and administration facilities together with occasional contracts for hired in plant and equipment. The contribution to the local economy will typically involve the purchase of local goods and services such as:

Site staff and employees	Road haulage
Fuel and oil purchase	Plant and vehicle hire
Plant repairs and spares	Building contractors
Landscape contractors	Tree and shrub purchase
Office supplies and equipment	Canteen supplies

The proposal will therefore provide local employment.

### **Restoration**

31. The proposed restoration of the working area is illustrated on Plan No. 8 and has been designed to ensure continuity of extraction and restoration. The final restored landform has been designed to accord with good landscape practice and takes account of local landscape strategies. The intention of the restoration scheme is to produce a landform which is sympathetic to the surrounding topography and which supports a return of a major part of the site to agriculture. The remainder of the site will be restored to conservation uses including calcareous grassland, herb-rich grassland and tree and shrub planting areas to provide habitat diversity.
32. The overall restoration scheme will be achieved by the creation of a restoration platform by spreading on-site quarry waste to agreed levels. Once these levels have been achieved the stored soils will be replaced and the proposed agriculture and grassland cultivated to form a seed-bed. The new hedgerow planting and woodland blocks will break up the regular appearance of the restored landform and have been designed to afford minimal disruption to farming practice. As previously indicated the resultant restored landform will be the result of a comprehensive landscape strategy and compliance with current good practice and a detailed management scheme.
33. Due to the length of time over which quarry operations will be undertaken a regular dialogue will be maintained with the Mineral Planning Authority, Natural England and the local Wildlife Trust concerning the details of site restoration for specific phases of the development. In this way variations in the

depth of working due to the site geology can be adapted to suit the overall restoration scheme. This scheme may also allow the incorporation of specific features such as retained areas of quarry face to permit geological study.

34. The final landform has been designed to create a terrain which may be some 10 to 15 metres lower than original ground levels but which blends with the undisturbed lands and achieves acceptable gradients to disperse rainfall and hence surface water.

#### **Landscaping.**

35. The final objective of the proposed development will be to achieve a positive and beneficial afteruse and to continue to reduce the visual impact of the proposed workings wherever possible.
36. A visual appraisal is provided in the Environmental Statement which accompanies the planning application. In conjunction with the quarry development a scheme of boundary screening and planting will be agreed with the Mineral Planning Authority. This will supplement visual screening afforded by the existing woodland planting around the proposed development area and storage of soils on the periphery of the extraction areas.
37. As described above the restored working areas within the proposed development will be at a lower level to that which exists at present and will give a visual diversity and interest when viewed from around the site.
38. The afteruses of the site will be carefully conceived to return land to agriculture and at the same time enhance the local conservation value of the site. The overall scheme produced will combine the results of various appraisals undertaken prior to, or during, the development of the site. A number of landscape initiatives will be introduced to establish opportunities for nature conservation and enhancement. This will include the development of new woodland and shrub planting with new hedgerows within the site in order to provide corridors for wildlife and increase habitat diversity.
39. As mentioned above consideration will also be given to enhancement of the local geological resource by retaining sections of the quarry face for supervised study.

#### **Aftercare.**

40. Upon the completion of each restoration phase a programme of aftercare will be implemented for a minimum of 5 years. Each phase will be managed to obtain the final restoration objective either for nature conservation or agriculture. A scheme of aftercare will be agreed with the local planning authority, and other interested specialist bodies, and will include such items as:
- additional site drainage
  - special rates and cover for fertilizer treatment

- maintenance of grassed areas
- cropping programmes and stocking rates
- weed control and fertiliser applications to new woodland
- general maintenance of trees and shrubs
- activity to encourage flora and fauna

## **ENVIRONMENTAL ASSESSMENT**

41. The development proposals relate to the quarrying of limestone within the original consent area and the proposed quarry extension. In formulating the proposals for future stone extraction full consideration has been given to the potential environmental impacts of the development. In this respect, measures have been provided for in the design of the scheme to reduce or remove any future adverse effects. Additionally, the environmental quality of the site will be enhanced upon completion of restoration. The principal environmental considerations are considered below;

### **Impacts on People**

42. The proposed site has been designed to be relatively remote from residential property with the nearest settlement being Wakerley lying to the north-east of the proposed extraction site. The nearest individual properties are Laxton Hall, some 1200 metres south-east from the working boundary, Town Wood Farm, some 800 metres from the southern working boundary and The Bungalows, some 1300 metres west of the working boundary.

### **Noise**

43. An assessment of the baseline noise levels and the potential noise impact of the proposed operations has been carried out by Acoustic Noise and Vibration.
44. Noise limits at potentially affected noise-sensitive locations have been determined from background noise levels carried out in September 2006.
45. The following noise sensitive locations to the quarry were identified as at dwellings at the following locations:
- Wakerley Village
  - Wakerley Church
  - Laxton Hall
  - Town Wood Farm
  - The Bungalows

46. It is proposed that the quarry would only operate within the normal daytime periods recommended in national planning guidance and noise limits have been proposed within the summary of the noise assessment.
47. Calculations have been made on the proposed operations within the quarry at the potentially most affected noise-sensitive locations. The assessment of the calculated levels indicates that the proposed criteria would not be exceeded and would be within the limits suggested by national planning guidance within the proposed boundary bunding provided.
48. In summary, the assessment indicates that noise from activities associated with the working of the quarry would be within acceptable noise limits and no further mitigation measures have been recommended to reduce noise levels from site operations.

### **Dust**

49. The proposed extraction will take place in five phases, commencing in the south-east, and working around the western side of the site towards the north-east. Soils and overburden mounds will be progressively formed and removed along adjacent boundaries and in adjacent working areas as extraction proceeds. Following soils stripping, the limestone will be ripped by dozer and then transferred by loading shovel to a mobile crushing and screening plant on the quarry floor.
50. Road transport will be loaded from stockpiles adjacent to the plant and will leave the site via an access road, ultimately joining the A43. The access road will be sunk below ground level and will be screened by bunds and hedgerows.
51. Planning consents for surface mineral workings feature conditions to prevent or control airborne dust, including a dust management and monitoring scheme if required. The crushing and screening plant will be subject to conditions attached to a Local Authority Prevention Pollution and Control permit for the process.
52. The Jurassic limestone at Wakerley is relatively soft and weakly cemented compared with Carboniferous limestone. Consequently, the proposed extraction and processing operations are unlikely to produce large quantities of fine dust. However, the matrix of the rock is readily degraded and is likely to result in the creation of mud in wet conditions.
53. Site haulage is typically the greatest dust source on surface mineral sites and the impact is increased over longer distances such as will occur at Wakerley, particularly during Phases 1 and 2. Any mineral which may be spilled will be readily broken down and, in dry conditions, will be readily raised into the atmosphere as dust by the passage of vehicles. There is also a risk of muddy track-out on the access road and there is a moderate risk of dust during soils handling and from wind blow across stockpiles, bunds and stripped ground.



54. In the absence of mitigation, there is on the public highway a local high assessed risk of adverse impact associated with dust due to track-out from the access road. There is a low risk at the southern end of Wakerley of adverse impact due to dust emissions from the access road. There is also a low risk to walkers and other users of the local footpaths and amenity areas, assuming that visible dust is controlled. Significant impacts due to dust are otherwise unlikely to be caused by the proposed quarry.
55. Standard good working practices will be adopted in accordance with current minerals guidance and the process guidance note for mobile crushing and screening. Specific mitigation measures will be adopted in respect of soils handling, which will be suspended near site boundaries when wind conditions are likely to result in dust being carried off-site. Soils bunds will be watered and seeded to bind the surface and minimise the effects of wind blow.
56. Haul routes will be located where possible towards the centre of the working phases and standard good practices will be adopted in respect of the construction and maintenance of the routes. All loaded vehicles leaving the site will be sheeted and will be inspected at the road crossing and before joining the public highway. Vehicle cleaning facilities will be provided on either side of the road crossing and at the site entrance.
57. Restoration in each phase will take place at the earliest opportunity to minimise the impact of wind blow across bare ground.
58. Overall, with the adoption of standard good practices and the proposed mitigation measures, the locally moderate impact of track-out from the access road will reduce to mild and the estimated risk will reduce to low. The other already low estimated risks will reduce to near zero and it is very unlikely that significant adverse impacts due to dust will be caused by the proposed quarry operations.

### **Flood Risk**

59. An assessment of the localised water regime and the potential flood risk impact of the proposed operations has been carried out by Hydro Logic.
  60. The proposed quarry development is planned in five general phases with a total duration of 45 years. The development will involve the creation of a series of temporary bunds for soil and overburden prior to the extraction of limestone. Restoration voids will occur progressively during this period with the end use being predominantly agricultural.
  61. The application site lies entirely outside the Environment Agency flood zones. Accordingly, there will be no impacts on flood plain storage or flow paths.
  62. The development process involves the creation of substantial voids and accordingly, there is likely to be a decrease in the surface run-off from the site area. A separate hydrological investigation has indicated that the impact of low flows will be minimal as the majority of the extraction void is located above the
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water table. Mitigation has been proposed to restrict surface run-off from the temporary bunds, since this may contain sediment. Outline design details have been presented for the construction of interception channels around the perimeter slopes of the bunds. In addition run-off from the tops of the bunds will be retained in infiltration areas.

63. Other infrastructure will comprise the construction of a haul road and associated buildings. Buildings will be established on existing areas of hard standing or will be provided with drainage to soakaways. Provision will also be required for drainage along the full length of the 3km haul road to minimise the impacts of water and sediment run-off from the road surface.
64. Restoration will involve the creation of four voids, with internal sink points to each void. No mitigation will be required for restoration.
65. It is recommended that a gauge board be installed in the pond on a tributary close to the site to enable the observation of water levels in the pond. This will provide useful baseline data for the pre-development period. In addition, this will provide a valuable reference for investigation of any impacts during the development period.
66. An inspection programme will be established for the bunds, trenches and tributaries. Inspections should take place with a frequency of every two weeks with more frequent inspections following heavy rainfall. The inspections should cover the scope of remedial work to ensure the structural integrity of the bunds and the trenches.

### **Traffic**

67. The application site is located some 12km north-east of Corby and 11 km south-west of Stamford. It lies 2km west of the A43 Northampton to Corby to Stamford road and some 2km south of the small village of Wakerley. There are only minor 'C' class roads between the site and this principal road network. The use of the A43 by some additional "heavy goods vehicles" (HGVs) is unlikely to create any operational problems and the additional traffic is unlikely to be noticeable to other road users. This report addresses the issue of how the HGVs to and from the quarry site can access the principal road network without creating any environmental or highway problems.
68. The A43 is the main strategic road in the area and runs on a south-west to north-east alignment between Corby and Stamford. Approximately 2 km to the north of the site the A47 trunk road runs in an east – west direction and joins the A43 at Duddington, providing further opportunities for HGVs to travel on principal lorry routes.
69. Between the site and the A43 there are two minor roads being the Wakerley to Fineshade road and the Wakerley to Duddington road. Both are small country lanes with a carriageway width of some 4m wide.

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70. A traffic counter was installed on the A43 immediately north of the junction with the Wakerley to Duddington road. It was installed for a week and identified traffic flows and speed by hour and by direction and with a simple vehicle classification. The results are summarised in the highways section of the Environmental Assessment.
  71. All vehicular access to the quarry would be via a new haul road that would run in a north-easterly direction from the quarry towards the A43 Corby to Stamford road. No quarry traffic would be permitted to use any other route. Where the haul road crosses the Wakerley to Fineshade road there would be a small mini-roundabout junction just at the point where a 30 mph speed restriction commences. This junction arrangement was identified at a site meeting with Northants highways department. The layout of this crossing is constrained by the need to avoid some verges as they are designated as Protected Verge and the other contains rare plants. The haul road would then continue across estate land until meeting the Duddington road some 600m west of the A43. Along this section there would be three inter-visible passing bays.
  72. The haul road would be 4m wide with frequent passing places. The only traffic it would carry would be the HGVs to and from the quarry and the occasional staff or service vehicle.
  73. The A43 carries a high proportion of goods vehicles and in the vicinity of the junction with the Wakerley road, traffic speeds are towards the maximum permitted on a 60mph road. Although the junction has a good layout and good visibility in either direction the introduction of turning traffic could introduce an unnecessary hazard. Therefore some minor widening would be undertaken to create a ghost-island turning lane. The minor road joins on the outside of a long bend in the A43 ensuring there is good visibility in both directions (in excess of 180m either way) and good visibility to any HGV waiting to turn off the trunk road. The provision of a 3.5m wide turning lane will allow HGVs travelling to the quarry to wait in the middle of the road without requiring following vehicles to slow-down or stop. The 1m wide lane edge around the inside of the bend will be unaffected.
  74. The anticipated extraction rate is some 250,000 tonnes per year. This equates to an average of around 50 loads per day, based on the standard 4-axle rigid tipper lorry carrying around 20 tonne payload. Hence there would be 100 HGV movements per day in and out of the quarry. As described above, all these vehicles would use the haul road and the eastern section of the Wakerley to Duddington road to and from the A43 strategic road.
  75. The addition of up to 60 HGVs per day to the A43 will add 0.6% to the overall flow of 9274 vehicles per day or some 35.6% to the existing HGV traffic. The road is operating well below any capacity limitation and so these increments will be insignificant.
  76. The addition of 100 HGVs per day, or around 10 HGV per hour to the 0.6km section of Wakerley to Duddington minor road will have some impact, although
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this will be mitigated by the provision of three inter-visible passing bays. This additional traffic represents a very significant increase in existing traffic flows but as the flows are so low the presence of an HGV every 6 minutes over a short section will not create any inconvenience or danger to existing road users.

77. In addition to the creation of a small mini- roundabout at the point where the haul road crosses the Wakerley to Fineshade road, some other off-site measures will be undertaken
- a) provision of 3 passing bays on the 600m section of the Wakerley to Duddington road used by the quarry lorries;
  - b) minor widening of the A43 at the junction with the Wakerley to Duddington road to create a ghost-island junction;
  - c) a routeing agreement will be offered to prohibit lorries from using the Wakerley to Fineshade road. The design of the mini-roundabout will also inhibit vehicles trying to make this manoeuvre. These measures could be supplemented by Northants introducing a TRO (Traffic Regulation Order) prohibiting vehicles over 7.5 tonnes from using this section of road.

### **Enjoyment of The Countryside**

78. There are public rights of way in the vicinity of the proposed extraction site. Generally these will be unaffected by the development although there will be a need to divert footpath PC2 which runs in a general north-south direction through the site. It is suggested that this will remain in its existing position, with suitable warning signs to users and quarry traffic, whilst phases 1 and 2 are being worked and temporarily diverted, around the south-western periphery of the site, during the working and restoration of Phase 3. Once restoration of Phase 3 has been undertaken the footpath may be reinstated along its original route.

### **Landscape and Views**

79. The Site is situated within the '*Rockingham Forest*' Regional Character Area (RCA) and Natural Area. The Northamptonshire Current Landscape Character Assessment puts the Site within 3 landscape character types and areas (LCAs):
- The Wooded Limestone Hills and Valleys (King's Cliffe Hills and Valleys LCA);
  - Farmed Scrap Slopes (Harrington to Duddington LCA); and
  - The Ironstone Quarried Plateau (Kirby and Gretton Plateau LCA)

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80. The Site can be split into 4 areas. Most of the areas are of Good Landscape Quality, the remainder is Poor. Part of the Site is designated as a Special Landscape Area and a number development plan policies relating to landscape and visual issues apply to the Site.
  81. Part of Wakerley Spinney, some 300m south of the Proposed Access Road is the nearest designated SSSI. Wakerley Oaks, Wakerley Spinney and Great Wakerley Wood are all Ancient Woodlands and also lie outside of the Site. A number of designated County Wildlife Sites and Protected Wildflower Verges occur near the Site and the Proposed Access Road passes through a small section of two of these areas.
  82. The landscape value of the Site, in this context, should be considered to be of a Medium level overall.
  83. The development proposals involve operating the Site for approximately 45 years. The Site will be progressively restored to lower land levels with a variety of landuses, including native broadleaved woodland, conservation species-rich grassland, agricultural fields with conservation headlands and hedgerows, scrub, a permanent pond and ephemeral pools/wet areas, in accordance with the landscape character of the area and contributing to biodiversity action plan (BAP) targets.
  84. All restoration and aftercare works will be undertaken in accordance with recognised good practice guidance.
  85. A number of landscape and visual impacts from the proposals were identified during the assessment and a number of primary and secondary mitigation measures employed to reduce or avoid the residual effects. One of these measures involves the use of temporary, vegetated screening bunds (elongated mounds) designed to create minimal adverse effects themselves, whilst screening operations beyond. Another involved the 'sinking' of haul access routes into the existing ground to reduce their prominence in the landscape.
  86. The Zone of Visual Influence (ZVI) or 'zone of theoretical visibility' was determined using 3D computerised techniques and the visibility checked in the field. Twelve principal representative viewpoints were selected to provide representative assessment points from within the ZVI. These included visual receptors such as long-distance footpath walkers, local footpath users, road users and those living in nearby dwellings.
  87. In the scale of assessed effects, those of 'Major' significance are the most material in the decision-making process for the proposed development. The highest adverse visual and landscape impacts found were of Moderate significance, although most adverse impacts are limited to Minor or Minor-Moderate significance. Close-range viewpoints, adjacent to the Site will have improved views of the Site upon restoration – the highest beneficial effect will be of Major significance.

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88. Overall, the proposed development has a number of adverse impacts during particular phases of the operational period, which have been mitigated to a significant degree, with permanent beneficial effects upon restoration.
  89. The proposals comply substantially with the Development Plan policies relating to the Site and the restoration scheme usefully contributes to biodiversity targets for the area. The adverse landscape effects during the operational period are of Moderate-Major significance and the beneficial landscape effects upon restoration are of Moderate significance.
  90. It has been demonstrated that the proposed scheme is capable of being delivered in an environmentally acceptable manner by the application of the proposed mitigation and industry best practice.

### **Impact on Water Environment**

91. The understanding of the water environment within the Extraction Area and its vicinity which has been gained from this study has demonstrated that the total volumes of surface water and groundwater within the Extraction Area and its vicinity are small: The mineral comprises the upper part of an aquifer system which has a very limited saturated thickness and lateral extent and which is perched above a significant thickness of clay deposits.
92. The great majority of the mineral is situated above the watertable, hence the extant regime will be largely unaffected directly by the proposed development. A limited amount of sub-watertable working will be undertaken in the northernmost section of the Extraction Area.
93. It is not proposed to discharge water derived from the quarry void within the site boundary. Water will be pumped from the floor of the quarry to unworked or restored sections within the confines of the Extraction Area. The use of recharge ditches / trenches and, possibly, larger areas of ground from which overburden has been removed, will promote the infiltration of water to the underlying strata. The retention of water generated from the workings within the confines of the site boundary has been proposed specifically to minimise the potential for impact upon the water environment in the vicinity of the site.
94. After the cessation of mineral extraction active water-management will cease. The majority of the restored area will be free-draining with several soakaways incorporated into the restoration to facilitate the ability of rainfall-derived water to enter underground strata.
95. The understanding of the water environment in the vicinity of the Extraction Area which has been gained from the study has allowed the identification of potential impacts which may occur upon it as a result of the proposed development. The relatively small volumes of both surface water and groundwater which will be affected by the proposed quarry, and the absence of water-supported features of ecological interest or water abstractions, are such that specific mitigation measures are not proposed.

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### Ecological Impact

96. An independent ecological assessment has considered the likely ecological and nature conservation impacts of the proposed quarry development near Wakerley, Northamptonshire.
97. The ecology of the proposed development area has been reviewed. Species and habitats are evaluated. Potential sources of nature conservation impact are outlined and predicted effects of the proposed development are described. The significance of these effects is evaluated and mitigation measures discussed. Any residual effects following mitigation are identified.
98. Eight main Phase 1 habitats were identified within the application area; broadleaved semi-natural woodland, dense scrub, unimproved neutral grassland, improved grassland, standing water - pool, arable, species-poor hedge - intact and defunct.
99. One statutory Site of Special Scientific Interest (SSSI) occurs in the vicinity of the application area some 700m from the proposed extraction area and 290m from the proposed haul route at its nearest point. Fourteen non-statutory county wildlife sites (CWS) occur in the locality, of which five lie immediately adjacent to, or partially within, the application site. Two non-statutory protected wildflower verges (PWV) also occur in the immediate vicinity and are crossed by the proposed haul route.
100. Other than very small areas of the application area that are designated CWS or PWV, the habitats that would be directly affected by the proposed works are considered to be of negligible nature conservation value.
101. Of the vascular plant species recorded, none are considered to be notable in a national context. One species, knotted hedge-parsley, is considered to be rare on a county basis, ie: a native species recorded in only 3-15 sites in the county.
102. Of the bird species recorded none are red data book species. Two, skylark and grasshopper warbler are "red list" species (high conservation concern). A further four (kestrel, dunnock, green woodpecker and willow warbler) are on the "amber list" (medium conservation concern). However, given the small number of individuals of these species likely to be present, the bird interest at this site is not considered to be significant.
103. Two badger setts (probably outlier setts) are present. No evidence for the presence of specially protected species other than badger was recorded. Habitat suitable for common lizard is present but no lizards were recorded. No other notable species were recorded or are believed likely to occur.
104. Direct impacts on habitats of nature conservation value in a county context (ie: county wildlife sites) have been almost entirely avoided by careful design of the proposed working area and haul route. The proposed haul road crosses the Wakerley Oaks Disused Railway Line County Wildlife Site but at the point

of an existing agricultural access. Therefore only a very localised adverse impact is predicted with very limited habitat loss (in the order of 0.01ha). This is considered to represent an impact of negligible or, at most, minor significance.

105. The proposed haul road also crosses two protected wildflower verges. The small loss of habitat at these points (in the order of 0.01ha) is also considered to represent an impact of negligible or, at most, minor significance.
106. No significant ecological effects from dust, noise or hydrological changes are anticipated.
107. The proposed phased restoration scheme is designed to significantly enhance the nature conservation interest of the locality and includes:
  - Expanding the area of broadleaved woodland (some 28ha proposed)
  - Creation of unimproved species-rich calcareous and neutral grassland (some 20ha proposed);
  - Creation of conservation headlands;
  - Creation of scrub habitat (some 3ha proposed);
  - Creation of standing open water (a permanent pool) and ephemeral wet areas:
    - natural colonisation of the permanent pool with some marginal planting of site-native species;
    - contouring to give shallow margins shelving to deeper areas, a wavy margin and islands, spits or bars;
    - any planted species in the wet areas will be site-native and of local provenance where possible.
  - creation of new hedges (some 6.6km proposed).
108. Badger setts are protected by law and therefore loss of a sett or setts is considered to constitute a significant adverse impact. Measures proposed to minimise negative impacts and to comply with legislation are likely to include:
  - Additional specialist survey in advance of each phase of working to identify active setts and assess badger activity (if any);
  - Creation of artificial setts and relocation of badgers from any setts which will be lost from the area of working;
  - Supplementary feeding.
109. No other notable or protected species have been recorded as present or likely to be present other than common lizard which might inhabit areas of unimproved neutral grassland. Even so, measures are proposed to comply with legislation and ensure any impact is minimised. These include:



- The removal of hedges and any soil stripping should be restricted to the period between September and March inclusive in order to minimise any disturbance to breeding birds;
  - Given that the proposed works are phased over an approximately 45 year period and are unlikely to commence for several years post any permission, it is recommended that additional survey for notable and protected species is undertaken prior to each phase of working with comprehensive mitigation undertaken as required.
110. After mitigation measures and restoration have been implemented, no significant adverse residual impacts are predicted. Overall, there should be a significant increase in the nature conservation interest of the area following restoration.

### **Archaeology**

111. An assessment of the site archaeology and the potential impact of the proposed operations has been carried out by Archaeological services and Consultancy Limited.
112. Following a desk assessment, fieldwalking and geophysical survey one hundred and three trenches were excavated over an area of one hundred and two hectares.
113. The fieldwalking and geophysical survey had identified areas of archaeological potential and the trial trenching confirmed, and further quantified and defined, the extent of archaeological remains present. In general terms the site offers good archaeological potential and the focus of interest lies with the presence of Roman and Saxon iron smelting remains. Evidence for the industry was identified across the area and comprised groups of furnaces in the north part of the site and a number of linear features, interpreted as ore roasting pits, in the southwest and northeast parts of the site.
114. A complex of late Iron Age or early Roman furnaces was identified in the north central part of the site. Roman agricultural activity, including corn dryers and enclosure ditches were present nearby, and a substantial quarry pit was recorded. A programme of environmental sampling was also undertaken, which indicates that the Roman landscape was dominated by agricultural and domestic settlement.
115. Evidence for Saxon iron smelting was also identified. This was more dispersed than the Roman features and included a substantial complex adjacent to Wakerley Great Wood. A number of features identified as possible ore roasting pits and furnaces were present sealed by a large deposit of slag. Further possible ore roasting pits were identified at the west end of the airfield and the northeast end of the site, adjacent to the wood.

116. A number of archaeological features in the north part of the site were obscured by colluvial deposits. The destabilising of the soil may have been the result of woodland clearance, due to the need for fuel for the smelting industry.
117. The south part of the site comprises part of a Second World War airfield. Construction of the airfield has probably resulted in localised disturbance, but the survival of the ore roasting pits on the southwest part of the airfield indicates that archaeological remains have survived the disturbance caused by the construction of the airfield. The north part of the site is less disturbed and preservation is generally better, although all parts of the site are currently being degraded by plough action. A modest assemblage of pottery and artefacts was recorded.
118. The applicants are fully committed to ensuring that the impact on archaeology is minimised throughout the working of the site. Impact on the remains will be monitored and minimised by preservation by record. The proposed development provides an opportunity to contribute to the localised knowledge of archaeology in the Wakerley area and it is considered that the development will not give rise to a significant impact on archaeology or cultural heritage.

### **Soils and Agriculture**

119. An assessment of the soils, agricultural land quality and the potential impact of the proposed operations has been carried out by White, Young Green.
120. In the context of the above policies and for planning control purposes, there are two primary issues, the restoration of an equivalent area of Best and Most Versatile land and the recovery and reuse of soil resources for sustainable development.
121. The proposed restored landscape and afteruse is shown on Plan 8 and comprises fields suitable for arable agricultural use and fields managed as extensive calcareous grassland along with extensive new broadleaf woodland.
122. The handling of soils during stripping, storage and replacement would be by dumptruck and excavator using the "strip bed" system and following national guidance for soils handling with machines.
123. The restored agricultural areas would be the subject of a five year aftercare programme which would cover items such as cropping regime, soils treatments (e.g. compaction and fertility) and drainage.
124. The proposed restoration scheme would not result in any net loss of agricultural land. As it is proposed to recover the soils and restore a similar area and profiles as currently exist there will be no net loss of soil resources. Hence, the scheme is sustainable in both contexts. There is also an opportunity to reconcile the distribution of the better quality soils so that it can be locally aggregated into a shape that enables a higher grade of farming potential.

125. As there is no loss of the Best and Most Versatile land and soil resources no mitigation is required.
126. It is concluded that there are no land quality or soil conservation issues in planning terms arising from the proposal to extract minerals from the Wakerley site and that it conforms to both national and local policies.

### **Overall Assessment**

127. The examination of each area of potential effect has been undertaken in a thorough and systematic manner. In this respect, the design of the proposed quarry development has been formulated to ensure that no adverse effects will arise both during the period of development and thereafter during the progressive site restoration and aftercare.
128. Apart from localised wildlife designations the site does not affect any designated landscape, nature conservation or known designated archaeological interest areas.
129. The workings have been sensitively designed after undergoing a thorough assessment of their implications in environmental terms. Mitigation measures have been incorporated into the development to minimise intrusion and disturbance.
130. It is considered that the proposals accord with the principles laid down in National Planning guidance and in line with the requirements of the policies of the Northamptonshire County Planning Authority, supplemental planning guidance and emerging planning documentation.
131. The ultimate restoration of the site has the potential to provide an important enhancement of the ecological habitat in the locality providing additional ecological corridors and shelter for wildlife.
132. In terms of economic considerations the proposal will provide a quantity of limestone aggregate to supply the market from an indigenous source. The proposal will provide employment and also support indirect employment by virtue of site service requirements. This will stimulate and support the local economy by virtue of both direct and indirect supporting of jobs.
133. The development will also produce a substantial revenue to the local Council by way of annual rate contributions.