

DERBYSHIRE AND DERBY MINERALS LOCAL PLAN

Towards a Minerals Local Plan: Spring 2018 Consultation

CHAPTER 7

7.4 Vein Minerals

December 2017

Introduction

- 7.4.1 Vein minerals are a distinct type of mineral consisting of a crystallized ore within a wider band of host rock. The mineral veins with which we are most familiar are those of quartz and carbonate of lime. Within the County of Derbyshire (including the area within the Peak District National Park), lead was historically the major vein mineral worked, but in modern times the primary interest has been in fluorspar. The presence of a number of other vein minerals is also a common feature of the limestone deposits in the Plan area. Barytes is also often obtained from fluorspar workings, in varying proportions, as a secondary material. A lead ore (Galena) may also be present in these deposits and was sometimes used as a by-product. Calcite (calcium carbonate) is a common rock forming mineral and is the principal constituent of all limestones, including chalk, which largely consists of the fossil remains of marine organisms.
- 7.4.2 They are important for the many specialist industrial uses that can be made of them. They are valuable ingredients in the chemical, oil and steel industries and in modern high technology products. They are recognised as a mineral of national importance although there is no national policy specifically dedicated to the working of vein minerals. Vein minerals are subject to the general national policy which requires that mineral planning authorities make provision for an adequate and steady supply of such minerals, reflecting their importance to sustaining economic growth, but recognising they are a finite resource and should be worked in a manner which does not have unacceptable impacts on the environment and local communities. Further information about the geological formation of vein minerals, how they are mined and the uses to which they are put can be found in the following Background Paper.

Towards a Minerals Local Plan: Spring 2018 Consultation

Vein Minerals Background Paper, December 2017

Vision and Objectives

7.4.3 The Vision will help to define the direction of the Plan by stating where we want to be in terms of mineral development by the end of the Plan period. It will set out what the Plan area will be like in terms of mineral development in 2030 if the policies and proposals of the Plan have been delivered successfully over the Plan period. The Objectives will set out how the Vision will be delivered and implemented.

The objectives of relevance to vein minerals are:

Objective 1 - Ensuring a Steady and Adequate Supply of Minerals

Objective 2 - Delivering Sustainable Minerals Development

Objective 4 - Safeguarding Mineral Resources and Facilities

Objective 5 – Minimising Impacts on Communities

Objective 6 - Protecting the Natural and Built Environment

Objective 7 – Protecting the Peak District National Park

Objective 8 – Minimising Flood Risk and Climate Change

Further information regarding the Vision and Objectives is set out in Chapter 3.

Evidence Base

7.4.4 Derbyshire County Council and Derby City Council obtained information on vein minerals from a variety of sources (see the background paper referred to above for details) as a foundation for preparing the new Minerals Local Plan as a

replacement for the adopted Derby and Derbyshire Minerals Local Plan, 2000. A summary of the information obtained is presented below.

Global Production and Demand

- 7.4.5 Information about the production of vein minerals in the United Kingdom is limited with the most recent and accurate figures relating to the production of acid-grade fluorspar. Significant production of this mineral began at the beginning of the 20th Century, where demand largely derived from its use in steelmaking. Production increased in line with the rising demand for fluorine-bearing chemicals, which are ultimately derived from fluorspar. The peak in fluorspar production was 235,000 tonnes achieved in 1975, but output has declined progressively since the mid-1980s, due largely to the decline in demand by indigenous chemical and steel industries. Approximately 61,000 tonnes of acid-grade fluorspar was produced in England in 2005, falling to just under 37,000 tonnes by 2008 and 24,000 tonnes by 2014.
- 7.4.6 Internationally, the main fluorspar producing countries are China, Mexico, Mongolia and South Africa. World production was 9.3 million tonnes in 2011, falling to 6.4 million tonnes in 2015 with China producing about 59% of the total. Prior to the mid-1980s the UK was a net exporter of fluorspar but has subsequently become a net importer as indigenous supplies became less competitive. In 2010 imports of acid-grade fluorspar were restricted to Spain because of the elevated levels of heavy metals and phosphorous from other sources. Imports of metallurgical fluorspar are chiefly from Mexico and China.
- 7.4.7 The production of barytes has been closely linked to the oil and gas industry and world-wide production increased rapidly from the 1950s and 1960s. Latest available figures indicate world production of 9.3 million tonnes in 2011, falling steadily to 7.9 million tonnes in 2015. Although barytes is not uncommon in the UK, economic deposits are rare and the mineral has been extracted from only a few localities. Following the cessation of working in Wales, Shropshire, South Devon and the intermittent working in the Pennines, the major UK source has been the Foss mine near Aberfeldy in Scotland which opened in 1984 with a

capacity of about 50,000 tonnes per year. Despite the decline in the oil and gas industry, demand in the UK outstrips supply and we are no longer self-sufficient in barytes, as indicated by the import of 89,500 tonnes of the mineral in 2010. The latest production figures indicate that 44,000 tonnes were produced in the UK in 2014.

- 7.4.8 Domestic sourcing of vein minerals is now a key issue. In 2008, the European Union declared fluorspar as one of the 14 endangered strategic minerals. A reappraisal is due shortly but it is expected that it will remain on the list. Fluorspar is included on the list as it is regarded as a critical mineral and one where there are uncertainties about the security of long-term supplies. China is the major producer but there are concerns that it may seek to retain domestic production purely for added-value use in China and therefore restricting future exports. Barytes was in the original EU top 30 critical list and the correlation of sourcing with fluorspar is such that concerns also remain for this mineral.

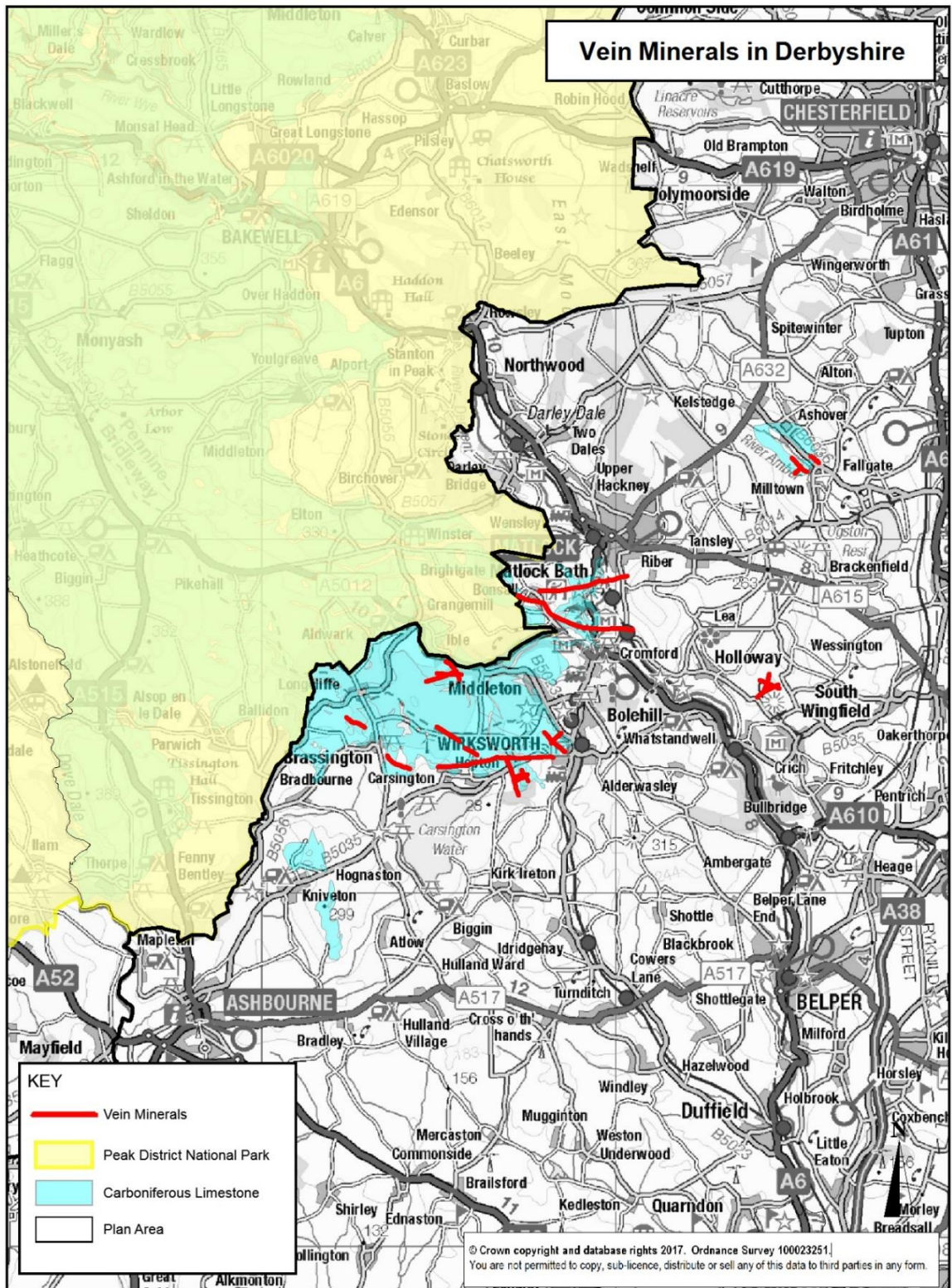
Vein Minerals in Derbyshire

- 7.4.9 Mineralised veins running through the Carboniferous Limestone of Derbyshire have been of economic importance for centuries. Within Derbyshire, the majority of vein mineral deposits occur within the Peak District National Park area. In the Plan area, the vein mineral deposits lie within the areas of high landscape value bordering the National Park (as classified by the 'Landscape Character of Derbyshire' first published in 2003), limited mainly to a line along the eastern edge of the Carboniferous Limestone around Matlock, Wirksworth and Brassington.
- 7.4.10 Mining activity has declined substantially over the last two decades and now the only extraction and processing activity in Derbyshire is in the Peak District National Park area which has also experienced a significant fall in production levels.
- 7.4.11 In recent years, fluorspar operations in the Peak District have largely been focused on the sites operated by British Fluorspar Ltd., who operate the country's only processing plant at Cavendish Mill near Stoney Middleton. The future of this operation has been in doubt on several occasions. In 1999 Laporte

Minerals (owner at the time) announced the closure of their fluorspar operations in the Peak District, but it was subsequently acquired in 1999 by Glebe Mines Ltd. INEOS Fluor (a UK-based chemical manufacturer) took control of the business in 2007.

7.4.12 Extraction and processing then ceased in 2010, but once again following the purchase of the business by British Fluorspar Ltd in 2012, extraction recommenced at the Bow Rake/High Rake site on Longstone Edge. The company has also invested in the refurbishment of the Cavendish Mill processing plant.

7.4.13 Surface mining extraction of fluorspar by BFL ceased in autumn 2017. All fluorspar is now produced from the underground mine at Milldam Mine near Great Hucklow for which the Peak District National Park Authority granted planning permission in 2015 to extend the life of operations to 2028 providing access to an estimated reserve of 2.4 million tonnes of ore. The permission also allows the output rate to increase from 60,000 tonnes per year to 150,000 tonnes. In addition, Furness Bros have been extracting and processing metallurgical spar on behalf of High Peak Spar Ltd. at Smalldale Head Quarry.



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Current Planning Permissions and Potential Future Developments

7.4.14 Whilst it is known that further resources of vein minerals are present in the Plan area it is not possible to quantify the scale of the overall resource, the volume of potentially economic reserves or even the volume of vein minerals with outstanding planning permissions, as often the main permission relates to limestone extraction where vein mineral extraction is stated as an ancillary operation and where the volume of the vein mineral was not quantified. Potentially economic reserves with the benefit of planning permission remain in Ball Eye Quarry, Cromford, although the working of the veins is restricted by the terms of the main mineral planning permission which is for limestone extraction and requires that any vein mineral extraction follows the limestone faces. The level of extraction at this quarry has been limited in recent years although the site owner has stated that the site is rich in fluorspar. No drilling has been undertaken to confirm the extent of the resource.

7.4.15 There are also some dormant vein mineral extraction sites at Ashover, Brassington, Matlock, and some other areas where the planning permissions have been revoked, including sites at Cromford and Milltown. Some areas of historical extraction have been worked out, yet are still covered by extant planning consents and some vein mineral deposits may simply be uneconomic to extract. Given the uncertainty surrounding these potential resources and the uncertainty over their future planning status, these sites have not been considered in the overall picture of supply.

7.4.16 A small amount of vein mineral (mainly barytes) is supplied from Slinger Top Quarry, Cromford. This amounts to approximately 20 tonnes a month.

7.4.17 The Peak District National Park is now the focal point of the fluorspar-barytes-lead vein mineral industry in the UK, being the sole location for current working. The largest permitted reserves are those which are accessible via the Milldam Mine at Great Hucklow. Vein reserves below Hucklow Edge, Bretton Edge and Eyam Edge are estimated to be more than 2 million tonnes. There are permitted reserves of at least half a million tonnes of fluorspar at Watersaw Mine (currently mothballed), the underground mine on Longstone Edge where the

current planning permission permitted working until 2015 (and subject to a current application to extend its lifespan to 2028).

National Planning Policy Framework (NPPF)

7.4.18 In general terms, the NPPF states that, 'Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. However, since minerals are a finite natural resource and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation'.

7.4.19 NPPF policy states that when preparing local plans, local planning authorities should identify and include policies for the extraction of mineral resources of local and national importance in their area. Vein minerals are a resource of national importance. It also states that local plans should set out environmental criteria, in line with policies in the Framework, against which planning applications will be assessed, so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment and other aspects.

7.4.20 With regard to the determination of planning applications, the NPPF states that local planning authorities should give great weight to the benefits of mineral extraction, including benefits to the economy, and, as far as practical, provide for the maintenance of landbanks of non-energy minerals from outside areas of particular merit such as National Parks. This is of particular relevance to the issue of vein mineral extraction in the Derbyshire area where the situation is affected by the scale and availability of vein mineral reserves with the benefit of planning permission for extraction from sites in the Peak District National Park area and the availability of processing plant close to those sites.

National Planning Practice Guidance

7.4.21 The National Planning Practice Guidance (NPPG) was published in March 2014 and contains revised and updated planning policy and practice guidance on a wide range of planning issues, including planning for the extraction of minerals. It acknowledges that minerals are a finite resource

with restricted availability, such that locations where they are economically viable and where extraction would be environmentally acceptable may be limited. It also repeats the statement in the NPPF that minerals make an essential contribution to the country's prosperity and quality of life.

7.4.22 The NPPG states that mineral planning authorities should plan for the steady and adequate supply of minerals by one of three ways. In order of priority these are; designating specific sites where viable resources are known to exist, designating preferred areas (areas of known resources where planning permission might reasonably be anticipated), or designating areas of search for areas where knowledge of mineral resources may be less certain but within which planning permission may be granted. The last two options are not expected of National Park authorities. It also states that mineral planning authorities should recognise that there are marked differences in geology, physical and chemical properties, markets and supply and demand between different industrial minerals, which can have different implications for their extraction.

Derby and Derbyshire Minerals Local Plan, 2000

7.4.23 The relevant policy in the adopted Derby and Derbyshire Minerals Local Plan is Policy MP33; Vein Minerals, which states that:

'proposals for the working and processing of vein minerals will be permitted only where:

- the duration and scale of operations is limited to the minimum necessary to meet a proven need for the vein mineral
- the development can be carried out in an environmentally acceptable way and the least damaging means of production are employed
- the proposals are designed to avoid damage in the form of subsidence or landslips, and
- the waste disposal arrangements are acceptable particularly in relation to slurry from processing plants'.

Consultations Undertaken and Comments Received

7.4.24 The development of the new Minerals Local Plan has included a series of consultations to ascertain the views of relevant local authorities, organisations and bodies with an interest in mineral development and the potential implications of mineral development and the people of Derbyshire and their representatives.

Stakeholder Workshops 2009

7.4.25 In July 2009, Derbyshire County and Derby City Councils held a workshop for key stakeholders. This helped to identify the key issues and themes that people thought the new Minerals Local Plan should address and sought the input of stakeholders in developing the vision and objectives for the Plan. The outcomes of the workshop were published on the Council's website and in a newsletter that was circulated to stakeholders.

7.4.26 These comments were taken into account in the preparation of the Issues and Options Report. The issues of relevance to vein minerals were those concerning how to make adequate and proper provision for future extraction and the role of the Plan area in reducing vein mineral extraction from within the Peak District National Park area.

Issues and Options 2010

7.4.27 The Issues and Options exercise recognised the world market for fluorspar and barytes but also noted that it is very difficult to plan for that need as demand fluctuates widely over time, the increasing availability and supply from other countries and the uncertainty, at the time, of the only processing facility of its type operating in Derbyshire at a site in the Peak District National Park. The exercise also recognised the inherent problems arising from the location of vein mineral resources which often corresponded with areas of high landscape value and the limitations of information about the scale and commercial viability of resources in the area.

7.4.28 The Paper proffered the scenario that the national need for these important vein minerals would support a case for allowing proposals for extraction but that this

must be balanced against any impact of working on sensitive locations, the environment and local communities. In proposing how to manage provision for vein minerals it suggested the inclusion of a policy which set out similar criteria to those in the existing Mineral Local Plan policy (Policy MP33). All respondents agreed with this suggestion. Further information is available in the following documents:

**Derby and Derbyshire Minerals Local Plan: Issues and
Options Consultation, 2010.**

**Responses to Derby and Derbyshire Minerals Local Plan
Issues and Options Consultation, 2011.**

**Interim Sustainability Appraisal (SA) of the Issues and Options Paper
2010**

7.4.29 The SA concluded that there are no distinct alternatives other than not to include a policy. Details of a criteria policy would determine the impacts of vein mineral working and the SA process could influence the development of this policy without the need to consider alternatives. The full appraisal is set out in the following document:

**Towards a Minerals Local Plan: Rolling Consultation 2015-2017
Interim Sustainability Appraisal (SA) Report, November 2017**

Towards a Minerals Local Plan – Rolling Consultation 2015/2016

7.4.30 The draft proposals set out in the Issues and Options exercise were prepared prior to the introduction of significant changes in international and national planning policy, notably the publication of the National Planning Policy

Framework. Other emerging local policies and strategies and new evidence base were also considered to be important factors that should be taken into account in the formulation of the vision, objectives and policies for the new Plan, including the approach of the Plan to the provision for vein mineral extraction.

7.4.31 This consultation exercise included a specific vein mineral based paper setting out a series of issues and options to help determine the approach of the new Plan to future vein mineral extraction. It recognised that vein minerals are a scarce, but very important resource due to the specialist uses to which they can be applied. It also recognised that the winning and working of these resources in Derbyshire has been on a small scale compared to other minerals, although the extraction operations have provided some economic benefits, but with some adverse impacts on the environment. The significance of these impacts has been particularly noticeable in those situations where the extraction sites were located in the more sensitive parts of the County. The demand for these minerals has varied in line with the fortunes of particular industries and domestic production has met growing competition from sources elsewhere in the world. Notwithstanding the uncertainties for future demand and production, it was acknowledged that it was important that the Minerals Local Plan sets out how provision can be made and how any proposals for the extraction of vein mineral reserves in Derbyshire in the future will be assessed and accommodated.

7.4.32 The consultation listed the factors that the MLP will need to take account of as follows:

- The small scale nature of the fluorspar and barytes industry compared to other minerals and the marked decline in domestic production over the last thirty years.
- The unpredictable level of demand for fluorspar and barytes in the United Kingdom.
- The availability of cheaper resources from other countries.

- The economic need for processing facilities to be located close to the sources of the raw material (due to the high cost of transport of the raw vein bearing ore).
- The high cost of the processing plant relative to the volume of material processed and the limited prospects for new facilities being established in Derbyshire.
- The availability of an existing and recently refurbished processing facility within the Peak District National Park.
- The existence of known and permitted reserves at new or partly worked sites in the Peak District National Park.
- The lack of permitted reserves in the rest of Derbyshire and the limited level of information about the location and economic viability of reserves in the area.
- The absence of interest from vein mineral operators in sites within Derbyshire outside the Peak District National Park during the last ten years or more.

7.4.33 The consultation also set out the main mineral related requirements and guidance of national planning policy as the framework for the range of options available for the approach of the new Plan. This summary included the recognition of the continued supply of important minerals to the economic prospects of the country, the benefits to maintaining modern standards of living from the use of those minerals, the preference to provide as much information as possible about the location of vein minerals in the area and the potential acceptability of extracting those minerals and the need to set out how future vein mineral extraction proposals will be assessed and determined. Accordingly the consultation indicated that it would:

- Include a Plan identifying those areas where vein minerals are known to exist, but
- Not attempt to assess and define the likely level of acceptability of extraction from sites in those areas, nor

- Set out any specific provision figure for vein mineral extraction over the Plan period.

7.4.34 The consultation repeated the question in the Issues and Options exercise, concerning the inclusion of a specific, vein mineral criteria based policy in the new Plan and the range of criteria that could be included in such a policy . In line with national policy, the consultation also sought to canvas opinion about a preference for future extraction of vein minerals to be focused on sites outside the Peak District National Park to help preserve the special character of that area. Further information can be found in the following documents:

Towards a Minerals Local Plan: Rolling Consultation 2015-2016:

Towards a Strategy for Vein Minerals, April 2016

Towards a Minerals Local Plan: Rolling Consultation 2015-2016

Vein Minerals Supporting Paper, April 2016

7.4.35 Only one representation was received which recognised the scarcity of vein minerals resources in Great Britain, which in turn supported the need to safeguard all known fluorspar resources in Derbyshire. Further details can be found in the following document:

Towards a Minerals Local Plan: Spring 2018 Consultation

Report of Representations and Responses, December 2017

Assessment of Comments and Outcomes for the Proposed Approach

7.4.36 The very limited number of responses meant that it was not possible to draw any conclusions directly from the consultation exercise. In the absence of responses and also by inference, any opposition to the approach set out in the consultation paper, the new Plan will include an approach to future vein mineral

extraction in line with national policy and which generally maintains the approach of the existing Mineral Local Plan.

Duty to Co-operate

7.4.37 In order to obtain as much relevant information as possible about the scale, nature and location of vein mineral resources remaining in the United Kingdom and the approach of mineral planning authorities in those areas towards further vein mineral extraction, the Councils engaged in meetings and discussions with relevant authorities. We also corresponded with organisations and individuals with relevant knowledge and experience of vein minerals to develop our evidence base for the 2015/2016 Consultation exercise and for developing the emerging approach set out below.

Sustainability Appraisal

7.4.38 The Sustainability Appraisal process is a way of testing the impact of the Plan against a series of Sustainability Objectives. Where the process recommends improvements to the Plan these will be incorporated. A sustainability appraisal was undertaken on all the Papers that constituted the Towards a Minerals Local Plan Rolling consultation 2014-2017, including those concerning vein minerals. The SA concluded that:

The list of site assessment criteria are wide ranging and ought to address and potential effects upon environmental and social factors. However, it is difficult to predict the extent of effects at this stage as no firm criteria have been established and the policy is also high level and not site specific. Nevertheless, positive implications have been recorded for biodiversity, land and water resources, heritage and landscape, air quality, flooding and communities and health. A neutral effect on the economy and housing is predicted. A criterion could potentially be added to the list of criteria to cover the potential for minerals development to ensure that local communities benefit from employment opportunities.

7.4.39 The full appraisal is set out in the following document:

**Towards a Minerals Local Plan: Spring 2018 Consultation
Interim Sustainability Appraisal (SA) Report 2017**

The Proposed Approach

Identification of Vein Mineral Resources

7.4.40 The evidence base indicates that a variety of vein mineral resources are to be found in the Plan area and there is national and international demand for some of those particular minerals. However, the level of information available is insufficient to be able to identify with any reasonable level of certainty, any specific sites where extracting the resource would be both commercially viable and environmentally acceptable, so it is not possible to identify individual sites. Instead it is intended that the new Plan will maintain the suggestion put forward in the recent consultation exercise and include a Plan which identifies the areas where vein minerals are known to be present.

Scale of Provision for Vein Minerals.

7.4.41 For the reasons set out above it is not practical to make a specific provision for future vein mineral extraction. It is not known how much vein mineral will be required by indigenous industries up to 2030 or how much of that unknown requirement will be met by imported supplies. In addition, and in the absence of detailed interest from mineral operators, it is not possible to indicate where and how much commercially viable vein mineral is available and in demand. Instead it is intended to maintain the approach of the existing mineral plan to set out a policy to determine any proposals for vein mineral extraction that do come forward.

Use of Policies to Assess Development Proposals

7.4.42 As it is known that vein mineral resources are present in the Plan area and in order to be able to determine the acceptability or otherwise of individual proposals that may come forward, it is intended to adopt the guidance of the NPPF and include a criteria based policy in the new Minerals Local Plan. It is also intended to maintain the approach of the existing mineral plan and include a specific criteria based policy for vein mineral developments. The manner in which vein mineral ore is hosted within other rock and the implications that has for the form of extraction and the impacts it could generate are considered to merit the use of a policy specific to vein mineral. In addition to addressing impacts the policy would also seek to minimise the volume of host rock that is extracted to limit potential adverse impacts and also set out requirements for post extraction restoration.

Policy for Vein Mineral Extraction

7.4.43 It is proposed to include a policy based largely on that in the adopted Minerals Plan, as set out below.

Policy MS12: Vein Minerals

Proposals for the working and extraction of vein minerals will be permitted, subject to the provisions of the Development Management policies of the Plan and where the applicant can demonstrate that:

- 1) The duration and scale of the development is limited to the minimum necessary to extract the vein mineral**
- 2) The development can be carried out in an environmentally acceptable manner**
- 3) The proposals are designed to avoid damage from subsidence or landslips**
- 4) The proposals provide appropriate and acceptable means of disposing of any waste generated by the mineral extraction**
- 5) Any processing plant is located and designed to minimise its appearance in the local landscape and is removed on the completion of the extraction operations**
- 6) The proposal includes plans to demonstrate how the site will be restored in the context of the local landscape and the uses that will be made of the site post restoration**

Do you have any comments on the approach to ensuring the supply of vein minerals, as set out in this Chapter?