

Appendix N

Ash Resources (Cambrian Quarry) Ltd
Cambrian Quarry
Gwernymynydd
CH75 LW

Our ref: EAWML 104422
Your ref: 0426/2304/WRP/01Version 1.5

Date: 11th December 2012

Dear Sir

Environmental permitting – Recovery or Disposal Operation
Pre application Reference: EAWML 104422
Proposed Operator: Ash Resources (Cambrian Quarry) Ltd
Regulated facility: Cambrian Quarry
Site Address: Cambrian Quarry, Gwernymynydd, CH75 LW

As part of our pre- application discussions you have submitted information to us that includes your assessment that the activity you wish to undertake at your site, amounts to a recovery operation. We have now fully considered your submission and we would like to advise you that:

We agree with your assessment that your activity is a recovery operation. This advice is based on the information you have provided in relation to waste types, amounts and nature of proposal including any proposed landform. If you change any of these between now and when you submit an application form, this advice may no longer apply.

For the sake of clarity, the following documents are considered to form the approved waste recovery plan;

- Waste recovery Plan Version 1.5 Document reference 0426/2304/WRP/01
- Stability assessment at Cambrian Quarry Gwernymynydd.

If you have any questions please phone me or email hannah.loughlin@environment-agency.gov.uk.

Yours sincerely

Hannah Loughlin
Permitting Officer

Recovery v Disposal Advice record

Name and contact details of Officer giving the advice	Hannah Loughlin Hannah.loughlin@environment-agency.gov.uk
Name of the proposed operator	ASH Resources (Cambrian quarry) Limited
Name of the site	Cambrian Quarry
Document reference for the submitted waste recovery plan	0426/2304/WRP/01
Outline of the proposals for waste recovery including the main issues permitting officer considered: Quarry stabilisation and restoration. Former quarry/mine that is in need of stabilisation. Once the quarry walls have been stabilised the site will be restored to woodland, open grass land and wet land	
Advice given to Applicant: 1, Is there a clear benefit to from the activity. At present there is a need to stabilise the quarry walls CCW have also noted the need to stabilise the quarry walls. Restoring the quarry to woodland, grassland and a wet land will be of some benefit to the bat species currently present on site, however more information is required on the benefit of the restoration aspect of the proposal. 2, Is the recovered waste material suitable for it's intended use? All wastes listed are suitable for restoration works. The Geoscience technical team (GTT) have assessed the waste recovery plan and has advised that all the waste streams listed are suitable for use in this proposal however they have advised that EWC 10 12 08 will need testing before deposition as they main contain substances that could cause pollution to surface water/ground water. 3, Is the minimum amount of waste being used to achieve the intended benefit? Cross sections showing current levels and proposed levels. With the maximum fill depth, minimum fill depth and average fill depth. We need to know how much of the fill depth is for the quarry stabilisation and how much of the depth will be for the restoration level. Until we have confirmation of the depth we can not establish if the minimum amount of waste is being used to achieve the intended benefit. Based on the OD information provided it indicates that the depth of fill will be over 30 metres which seems to be excessive for any restoration project. We would expect that the depth of material to be deposited is proportional to the end benefit of the site/proposal. 30 meters of fill is not required to provide a suitable growing medium for plants in order to create habitats. We would expect a depth of between 1 – 3 metres to be sufficient to provide a suitable growing medium. Anything greater than this would be classed as disposal. The Geoscience technical team (GTT) have assessed the quarry stabilisation aspect of the proposal and have advised that insufficient information has been provided. Cross sections and stability risk assessments are required before GTT can confirm that the appropriate volume of material is being used to stabilise the quarry slopes. 4, Is the waste being used as a substitute for a non waste material? The operator has stated that the proposal could go ahead using non waste but has said this is not a viable option 5, Will the proposal be completed to an appropriate standard? No information has been provided in response to this question. Other than stating that the movement, working and storage of soil will be carried out inline with the Construction code of practise for the sustainable use of soils on construction sites. We would expect the applicant to provide an engineering report/assessment in relation to the quarry stabilisation aspect of the proposal, and to provide evidence to show that the work would be completed to an appropriate construction standard.	

As the site is partly within the SSSI of Cambrian Quarry it is strongly advised that the operator undertakes discussion with CCW regarding their proposal. This is to ensure the proposal is in keeping with the on going management of the SSSI and will not negatively impact upon the protected species living within the SSSI and that CCW have no concerns regarding the proposed works.

More information is required to establish how the proposed restoration works will benefit the SSSI and how it will not negatively impact upon the protected species that inhabit the SSSI.

GTT have advised that the following information is provided:

Cross sectional diagrams

Stability Risk assessment

Hydrogeological risk assessment – more beneficial at the permitting stage but if it has been completed please provide it with the waste recovery plan.

With regards to using the waste under the CL:AIRE protocol please see our current position statement. Which can be located via the attached link:

<http://www.environment-agency.gov.uk/static/documents/Leisure/PS006.pdf>

Until a revised waste recovery plan addressing all the points raised above has been provided we can not fully assess the proposal.

22/08/12

Further to our original assessment additional information has been provided and assessed by GTT.

GTT comment that the slope angle 1 in 4 is acceptable for the stability of the quarry walls and even though the depth of fill is large this is in proportion with the size/shape of the quarry.

However we would like to see a full SRA including the following information:

Calculated factors of safety for the original and proposed slopes

Clearly defined reasons for stabilisation other than the danger of rock fall

Cross sectional diagrams have been provided are suitable.

A full and comprehensive waste recovery plan need to be submitted for assessment address all aspects of the proposal. To establish if an activity is recovery or disposal we need to assess the proposal as a whole.

Also as previously stated:

As the site is partly within the SSSI of Cambrian Quarry it is strongly advised that the operator undertakes discussion with CCW regarding their proposal. This is to ensure the proposal is in keeping with the on going management of the SSSI and will not negatively impact upon the protected species living within the SSSI and that CCW have no concerns regarding the proposed works.

No evidence has been provided to show that there has been any correspondence with CCW regarding this proposal.

A complete Waste recovery plan addressing all the points raised in our original advice sheet complete 12/06/12 and this amended advice sheet 22/08/12 is required before we are able to advise if the proposal is recovery or disposal.

05/11/12

Additional information submitted as per our request following our assessment on 22/08/12. Evidence has been provided to show CCW are in support of this proposal. If a permit is applied for CCW will be consulted with as part of our working together agreement on the proposal so their full opinion/approval will be sort at that stage.

The SRA was submitted to our Geoscience technical team for assessment.

GTT made the following comments:

This is a small deep Limestone quarry. The slopes all look to be between 1 in 4 and 1 in 5 and as such we would not consider the individual slopes on their own merits as unreasonable. There does appear to be quite a bit of evidence of small instability issues and potential for some larger ones, which appear to support the need for the stabilisation. This is a small deep Limestone quarry. The slopes all look to be between 1 in 4 and 1 in 5 and as such we would not consider the individual slopes on their own merits as unreasonable. There does appear to be quite a bit of evidence of small instability issues and potential for some larger ones, which appear to support the need for the stabilisation.

Because the quarry is relatively small in surface area and quite deep, this results in quite a proportion of the void being filled in where the slopes cross over in the base (15 to 20m). To avoid the base having to be filled to a depth before the slopes can be built would need steeper slopes in the order of 1 in 1 to 1 in 2.

The slopes have been designed to a Factor of Safety of 1.5.

GTT therefore request that you either consider a slope nearer 1 in 3 or provide robust justification for slopes greater than this, prior to us advising if the activity could be classed as recovery or disposal.

A revised WRP and SRA were submitted on December 7th. The revised SRA was submitted to GTT for their assessment.

And the following response was received:

It looks like the slopes have been modified to stand at around 1 in 3 which has also reduced the quantity of waste required from 470,000m³ to 390 to 410,000m³. The slope design appears reasonable and given that we have accepted the need for stabilisation at the site, we can accept that the applicant has proposed reasonable minimum quantities to achieve this aim.

I note from the stability document a number of assumptions and recommendations are made, pasted below. If we permit this activity, these recommendations should be highlighted to the area team who will be inspecting the site. The factor of safety is on the low side but the applicant has justified this because there will be no public access during construction and no means by which material can escape the site. The factor of safety is still greater than unity and as long as the recommendations are followed the proposal appears acceptable.

"It is understood that the imported material used for filling will

- not include unsuitable, saturated, contaminated or highly organic materials, and*
- will be laid in lifts not exceeding 1m, and*
- be dozed flat with nominal compaction from the plant.*

Based on this and following discussions with the Client, it is Geotechnics Ltd's opinion that

- bench heights should not exceed 5m,*
- berm widths should not be less than 3m, and*
- the local slope angle (between toe of slope and crest of bench) should be no greater than 23°.*

(This is based on a Factor of Safety of 1.15 on $f' = 26^\circ$, with c' assumed to be negligible. The assumed f' value of

26° equates to a typical effective friction angle for soft to firm clay fill materials)."

The activity is now advised to be recovery.

Date advice given: 11/12/12

Time Spent (minutes): Total 380

CAMBRIAN QUARRY

WASTE RECOVERY PLAN

**Application to stabilise and restore Cambrian Quarry
using non hazardous and inert materials**

Version 1.5

ASH RESOURCES (CAMBRIAN QUARRY) LTD

Document Reference: 0426/2304/WRP/01



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1.0	10/04/12	Draft	Robin Draper	
1.1				
1.3	15/10/2012	Draft	Robin Draper	
1.4	29/11/2012	Draft	Robin Draper	
1.5	07/12/2012	Formal submission	Robin Draper/Jan Edwards	

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SUPPORTING DOCUMENTS

EIA Scoping Application for restoration of Cambrian Quarry March 2012 – Sloane Mead
Ecological Impact Assessment 2012 – Chris Hall Ltd

Rationale of the Proposed Landform Associated with the Revised Restoration Design –
Bright & Associates

Notification of Cambrian Quarry, Gwernymynydd SSSI – Countryside Council for Wales

PLANS

PLAN NO. ASH/CQ/01 – LOCATION

PLAN NO. ASH/CQ/02 – CURRENT SITUATION

PLAN NO. ASH/CQ/03 – OUTLINE DEVELOPMENT PROPOSALS

PLAN NO. ASH/CQ/04 – OUTLINE RESTORATION CONCEPT

PLAN NO. 2304/426/01 –RESTORATION PLAN (STABILISATION
CONTOURS) EXISTING AND PROPOSED

PLAN NO. 2304/ 426/02 – STABILISATION CROSS SECTIONS
(EXISTING AND PROPOSED)

1.0 Introduction

1.1 Overview of Application

- 1.1.1. This Waste Recovery Plan has been prepared for submission to the Environment Agency to enable an assessment of whether the proposal to carry out restoration/landscaping works on land at Cambrian Quarry using suitable materials would be a 'recovery' operation. The proposal is to partially restore Cambrian Quarry, Gwernymynydd, North Wales by stabilising the quarry walls and creating areas of grassland and woodland to develop and enhance the biodiversity of this site in agreement with the Countryside Council For Wales (CCW). The site has recently been designated as part of a Site of Special Scientific Interest (SSSI). As part of the agreement over designation CCW agreed that the infilling of the Cambrian Quarry void could be undertaken as part of a 15 year scheme of management and enhancement for the site as a whole.
- 1.1.2. The location of Cambrian Quarry is shown on Plan No.ASH/CQ/01. The Quarry lies 2.5 km south west of Mold and 300 metres south of Gwernymynydd. The A494(T) Mold to Ruthin road runs 200 metres to the north of the Quarry. The current access to the Quarry is onto the minor Glyndwr Road, which runs to the south and west of the Quarry. The Quarry access is located 200 metres west of the junction where Glyndwr Road meets the A494. The OS Grid Reference around the centre of the application site is SJ21456 62160.
- 1.1.3. The Application is to be made by ASH Resources (Cambrian Quarry) Ltd, a subsidiary company of Alan's Skip Hire Ltd (ASH). ASH carries out a range of waste collection, recycling and restoration operations throughout North Wales and North West England. These operations include: a substantial skip hire business; two modern waste transfer/recycling facilities located in Wrexham and Bretton; earthworks contracting; and the production and supply of topsoil and recycled aggregate. The ASH Head Office is located at Bretton, near Broughton in Flintshire. ASH Resources (Cambrian Quarry) Ltd Lease Cambrian Quarry from the landowners who are Valeway Ltd and Jennings Building and Civil Engineering Ltd.

- 1.1.4. The southern half of Cambrian Quarry lies within the Clwydian Range Area of Outstanding Natural Beauty (AONB), the boundary of which is shown on Plan No. ASH/CQ/02. The Quarry also lies within the Cambrian Quarry SSSI, which was designated in November 2011, primarily due to the presence of a large colony of lesser horseshoe bats who use the old silica sand mine workings for hibernation purposes.
- 1.1.5. This Waste Recovery Plan has been prepared on behalf of ASH Resources (Cambrian Quarry) Ltd by Oaktree Environmental Ltd. Contact details are as follows:

Contact:	Robin Draper	Title:	Senior Consultant
Address:	<i>Oaktree Environmental Ltd</i> Unit 5 Oasis Park 19 Road One, Winsford Industrial Estate Winsford Cheshire CW7 3RY	Tel:	01606 558833
		Fax:	01606 861182
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Description of Site

Plan No.ASH/CQ/02, entitled Current Situation, provides a current (January 2012) topographical survey of Cambrian Quarry. The Quarry, shown outlined in brown, covers a total area of 7.3 hectares and can be divided into two main areas:

1.2 Old Quarry Area

- 1.2.1. This is an area of old mineral workings dating as far back as the early 1800's. These workings included quarrying, underground lead mining and underground silica mining and have resulted in the Area being made up of old quarry faces, spoil heaps, access roads and disused buildings. The two original entrances to the silica mine are located here and are shown as Entrance 1 & 2 on Plan No. ASH/CQ/02. The underground silica workings extend to the east and south of these entrances. Two further, small mine entrances (Entrances 0 & 4) are located within this Area and may be associated with the older lead workings.
- 1.2.2. The Old Quarry Area contains three old buildings, a disused weighbridge and areas of concrete hardstandings. There are two access roads that run through the Area, which were used to access the Quarry when it was operating. The Western Access Road runs in a south westerly direction, to the north of the old buildings, and then turns sharply to the

east until it reaches the old weighbridge. The Eastern Access Road runs around the eastern and south eastern perimeter of the Old Quarry Area to reach the Quarry void. When the Quarry was last operated in 2000 both of these roads were used to enable a one way system for lorries to be implemented.

- 1.2.3. A skip hire business has been operated from the Old Quarry Area since 1980. The main landowner (Valeway Ltd) continues to use two of the old buildings and the land around them, together with a small area of land to the west, for its skip hire business and the storage of building materials, plant and machinery. These areas are shown shaded grey on Drawing No.ASH/CQ/02. This use will continue and will not be affected by the proposed development except that, once the proposed new access is created, all traffic serving these areas will use the new access.
- 1.2.4. Part of the Old Quarry Area has planning consent for waste disposal and some historical tipping of industrial waste has taken place in the vicinity of the old buildings. The silica mine workings have previously been used for the storage of carbon black.
- 1.2.5. Most of this Area now comprises woodland and scrubland/calcareous grassland that have regenerated on the old workings and mineral tip areas.

1.3 Cambrian Quarry Void.

- 1.3.1. To the south of the Old Quarry Area is the Cambrian Quarry Void which covers an area of approximately 2.8 hectares and is shown cross hatched yellow on Plan No. ASH/CQ/02. The void reaches a maximum depth of 266 metres above Ordnance Datum (AOD) in the north of the void, rising to 280 metres AOD in the south of the void. The land surrounding the void is at a height of around 300 metres AOD in the north, rising to 315 metres AOD in the south.
- 1.3.2. The Quarry was worked for limestone between the 1950's and 2000, by which time the majority of the limestone reserves had been worked out. The far north eastern part of the Quarry extends up to the underground silica workings and a small adit is located in the upper Quarry face (Entrance No.3 on Plan No. ASH/CQ/02).

- 1.3.3. The western Quarry slopes are steep and but without distinct quarry faces. The southern, eastern and northern faces are near vertical with no quarry benches and considered to be unstable and show evidence of minor collapse posing risks within the void and to areas surrounding the void. The stability of the surrounding land is also at risk due to the instability of the quarry faces posing a risk to the underground workings which are the most important conservation feature of the site. The eastern face is also very close to the site boundary and a major collapse could encroach onto neighbouring land.
- 1.3.4. The Quarry floor and the shallower faces have started to naturally re-vegetate, these are currently characterized as calcareous grassland which is a very desirable habitat but this is rapidly degenerating into birch scrub in common with much of the rest of the site where there has been no management of the land. There are three small ephemeral ponds in the southern part of the void that are dependent upon rainfall and dry up during periods of dry weather. These support a small colony of Great Crested Newts although without management it is inevitable that these features will vegetate and disappear as suitable breeding habitat for amphibians within a few years.

1.4 Planning Status

- 1.4.1. A Planning Application for the restoration of the Cambrian Quarry void is to be submitted to Flintshire County Council. The Application Site is shown outlined in red on Plan No.ASH/SQ/03 and the Outline Restoration Contours are shown on Plan No. 2304/0426/01(Rev A). A summary of the restoration proposals to be included in the Application is provided in Section 2 of this draft WRP.
- 1.4.2. The Cambrian Quarry Void is covered by one planning permission for 'Quarrying at Cambrian Quarry', granted in 1951 under Permission Ref. H51/279. This permission covers 3.7 hectares and is shown on Plan No. ASH/CQ/02
- 1.4.3. Permission Ref. H51/279 was subject to review under the 1995 Environment Act and an Application for the Determination of New Conditions was submitted in January 1997. This review application has not been determined as an Environmental Statement is now required to be submitted under EIA Regulations introduced in 2009.

- 1.4.4. The permission was formally suspended in 2011, under these Regulations, and mineral extraction operations cannot recommence until an Environmental Statement has been submitted and the review application is finally determined.
- 1.4.5. There are three planning permissions for the disposal of industrial waste covering the central part of Cambrian Quarry. One of the waste permissions was granted in 1962 and lies entirely within the Old Quarry Area. Two further permissions were granted in 1963 (Refs. H63/264 and H63/265) and cover the northern part of the Cambrian Quarry Void and part of the Old Quarry Area. The extent of these latter permissions (approx 1.2 hectares) is shown on Plan No. ASH/CQ/02.
- 1.4.6. The Planning Application for the restoration of Cambrian Quarry will propose that these old mineral and waste permissions are revoked. This will remove any uncertainty about mineral extraction or tipping operations recommencing at the Quarry in the future and ensure that the restoration of the Quarry is carried out in accordance with a single, modern planning permission.

1.5 Environmental Permitting Status

- 1.5.1 The site will require approximately 390 to 410,000 cubic metres of material to achieve the proposed restoration contours. This quantity of material will require a bespoke permit irrespective of the decision on recovery/disposal.
- 1.5.2 An alternative to permitting may be afforded by the CL:AIRE code of practice which would if followed lead to the material used to restore the quarry being considered to be no longer waste. Whilst technically feasible this approach has practical and financial limitations for projects where it is anticipated that the fill will arise from a number of sources over an extended timeframe.

1.6 Statutory designations within and close by the site

- 1.6.1. The boundary of the Clwydian Range Area of Outstanding Natural Beauty (AONB) runs through the northern part of the Quarry Void (see Plan No. ASH/CQ/02). The Old

Quarry Area is not, therefore, within the AONB but virtually the whole of the Quarry Void which is the subject of this recovery plan lies within the AONB.

- 1.6.2. The Site lies within the Cambrian Quarry Site of Special Scientific Interest (SSSI) which was confirmed as an SSSI in November 2011. The SSSI covers 23 hectares (see Plan No.ASH/CQ/02) and was designated primarily because of its special biological interest for its large population of hibernating lesser horseshoe bats. The bats use the silica mine workings that run beneath the north eastern part of the Old Quarry Area and beneath the fields to the east of the site. Outside of Cambrian Quarry, the majority of the SSSI is woodland which lies to the east, north and west of the Old Quarry Area. This woodland is used for foraging by the lesser horseshoe bats. The designation of the SSSI was agreed with CCW with agreement that the Cambrian Quarry void would be in filled to stabilise the quarry walls and create areas where calcareous grassland could be established and managed in the long term as grazing or hay meadow. The citation for the SSSI identifies that the quarry has instability problems and that the infilling and restoration of the quarry void would be beneficial.
- 1.6.3. The citation also emphasises a need for the management of the site to maintain a mix of vegetation cover particularly grassland. The best way to achieve this would be to introduce livestock grazing and/or the harvesting/cutting of grassland areas to check development of birch scrub, the proposals will create an area where livestock can be grazed securely and ensure long term management of the site as a whole.
- 1.6.4. A detailed Ecological Impact Assessment has been prepared for the site and accompanies this Recovery Plan. This concludes that the proposed infilling and restoration to properly managed calcareous grassland and wetland areas will be a significant improvement to the site. It further concludes that the infilling will also provide income which will secure ongoing management of the site for an additional 10 yrs following completion of the 5 years aftercare which the planning consent will require.
- 1.6.5. The EcIA also includes a draft Outline Management Plan for ongoing management of the site, this includes the works to relocate the Great Crested Newt Colony and other amphibians from the ponds in the quarry void. It also includes details of the ongoing management programme for the wider site which this development will support.

- 1.6.6. The Alyn Valley Woods Special Area of Conservation (SAC)/SSSI lies at its closest point 600 metres to the west of the Site.
- 1.6.7. There are no public rights of way crossing or adjacent to the Application Site. The closest footpath to the Site is Footpath No.34 which runs in a north south direction to the west of the Site and is 45 metres from the south western corner of the Site at its closest point.

2.0 Stabilisation/Restoration/Landscaping Proposals

- 2.1 The site is located as shown on Drawing Nos. ASH/CQ/01. The original and proposed ground levels for the site are shown on Drawing No. 2304/426/01 (Rev A) and the proposed ground levels arising from the stabilisation/restoration concept for the site are shown on Drawing No. ASH/CQ/04. See also Drawing 2304/426/02 (Rev B) for original and proposed cross sections.
- 2.2 A new internal access road will be constructed along a route generally parallel to Glyndwr Road until it meets the current Quarry access road, as shown on Drawing No. ASH/CQ/03. Due to the steep topography of the land to the south of Glyndwr Road this is the only feasible route for a new access road. A new junction with Glyndwr Road will be constructed approximately 25 metres from the A494 and Glyndwr Road will be widened slightly along this 25 metre stretch. Initially the internal access road will be 9 metres wide to accommodate two HGVs and will then narrow to 4.5 metres. Traffic lights or a radio control system will be used to control two way HGV movements on the single track section of road.

Stabilisation

- 2.3 Stabilisation of Cambrian Quarry will arrest instability on the quarry walls and remove areas where there are unprotected shear drops, these are a danger to all persons wishing to enter this area of the site and grazing domestic animals. The position and proximity of underground workings relative to the quarry faces are not known so it is considered prudent to avoid the use of vibrating plant and to avoid over compaction.
- 2.4 The practicalities of working within the quarry footprint to minimise encroachment on the SSSI require working on benches with a maximum height of 5m the benches will be built up in 1m lifts and compacted with the handling plant. The engineer employed has advised that the minimum slope for the bench berms is 23 degrees for a bench height of 5m with a minimum berm width of 3m (see accompanying stability report), the minimum safe working width for a bench is considered to be 6m.
- 2.5 Based on this approach and starting with a 6m bench at the highest point has produced the stabilisation concept. Being a narrow deep quarry the stabilisation requires the base

of the quarry to be filled to a depth of 15 to 20 m before the stabilisation slopes can be emplaced. The overall slope angle of about 20 degrees over a two bench height is being proposed for preliminary design purposes. More detail can be found in Section 7.4 (revised 06/12/2012) of the Stability Risk Assessment. The stabilisation sections are shown on the cross sections on drawing numbered 2304/426/02 (Rev B).

- 2.6 The stabilisation as proposed here will require approximately 410,000 cubic metres of material.
- 2.7 The majority of imported material will be screened to recover aggregates and re-usable soils for restoration or re-sale. This allows the quality of the stabilisation material to be controlled. Experience from previous projects shows that it will have a high clay content and be a suitable material for engineering works to stabilise the site.

Restoration/Landscaping

- 2.8 The aim of the landscaping scheme is the creation of a substantial area of grassland which can be managed sustainably by grazing or cutting, in the absence of such management the bulk of the quarry and surrounding areas are being rapidly colonised by birch scrub, degrading the diversity of the SSSI (as detailed in the EcIA). In addition an area of wet/boggy ground will be created which will also provide seasonal open water and further diversity of the habitat.
- 2.9 The landscape architects Rick Bright Associates have provided a report titled “Rationale of the Proposed Landform Associated with the Revised Restoration Design” which details the policies and technical restraints behind the proposed Landform.
- 2.10 Whilst the restoration and landscaping scheme aims to satisfy the requirements of the SSSI for a sustainably manageable and more diversified habitat it also seeks to satisfy the policy objectives of the AONB enhancing the quality of the landscape from a visual perspective.
- 2.11 The report from the landscape architect details the policy constraints on producing an acceptable landform for this area. The report also details the concept of the restored area being grassland for grazing/forage and areas for tree and shrub planting. The report

explains that to achieve these goals will necessitate the emplacement of additional soil on the stabilisation material to create suitable slopes that fit both the visual imperative of the AONB and the need to manage the site as grazing/hay meadow. It is estimated that this will require between 50 and 60,000 cubic metres of material.

- 2.12 Once full stabilisation has been achieved a restoration profile will be produced by reworking the bench berms to create smooth slopes and placement of additional material to achieve the restoration contours. The restoration soils being applied to this profile in two layers providing a subsoil and a calcareous topsoil profile and subjected to an appropriate level of compaction.
- 2.13 At the southern end of the quarry the restoration seeks to marry in with existing tipped material whilst protecting the mine entrance. Site drainage will be designed to create small ephemeral ponds and a low point to create a larger seasonal pond and boggy area. This will incorporate a drainage point designed to direct excess water from surface drainage into a soakaway on the quarry floor safeguarding the mine entrance.
- 2.14 The boggy/seasonal pond area thus provides further diversity of habitat and sustainable drainage for the restored site. The drainage/wetland area is positioned to avoid directing drainage towards the existing deposited material or the entrance to the mine.
- 2.15 The works to create a new access road and other infrastructure works will produce some soils suitable for restoration, which will be stored with a view to it being utilised for restoration of the site. During infilling of the site any suitable material will also be reserved for this.
- 2.16 Prior to placement of topsoil the area will be ripped to a minimum depth of 0.4 m to ensure good drainage.
- 2.17 Prior to planting the land will be cultivated and prepared in accordance with good agricultural/silvicultural practice.
- 2.18 The seed mixes and tree stock for restoration will be sourced from suppliers agreed with CCW to ensure only suitable species are planted.

2.19 The restoration profile in conjunction with the landscaping scheme, produces a landform that is in keeping with the landscape of the surrounding Area of Outstanding Natural Beauty. Creating a small dry shallow valley suitable for grazing or management as a hay meadow and boggy areas and open seasonal water. The landform will marry into the surrounding areas or where this is undesirable leave the mine entrances and exposed areas of quarry wall, where stability and safety can be managed and conservation interest can be retained/enhanced. The final scheme will require detailed agreement with CCW to ensure the SSSI is enhanced by increasing the diversity of flora and fauna on the site and providing maximum foraging opportunity for the lesser horseshoe and other bat species. The scheme also secures long term management for the whole site.

2.20 Stabilisation/Restoration Materials and Timescales

As part of the applicant's business, it handles large quantities of inert materials such as subsoil and clay that are removed from construction sites and road building projects. The Applicant's two waste transfer stations also produce clean, inert soils which are suitable for restoration projects. Up until 2010 the applicant used these materials for the restoration of Bryn Y Gaer Quarry near Hope in Flintshire. Currently, the materials are transported to a number of third party sites for use in restoration. Over the last three years, the Applicant has generated between 100,000 tonnes and 140,000 tonnes per annum of inert materials that would be amply suited to use in restoration.

2.21 It is proposed to use these materials to stabilise/restore Cambrian Quarry. At an average conversion factor of 1.9 tonnes to 1 cubic metre when compacted, this equates to 53,000m³ to 74,000m³ of restoration material available each year to restore the Quarry. The restoration scheme as currently envisaged requires a total of approximately 410,000m³ of material which would take between 6 - 8 years to restore at these infill rates. To allow for fluctuations in market conditions, the planning application will propose a maximum life of 10 years for the restoration operations at Cambrian Quarry.

3.0 Land Benefit

- 3.1 The Quarry void was created as a result of quarrying for silica rock and limestone and mining a variety of other minerals which has created the roosting habitat for the lesser horseshoe bats. There is existing consent for deposit of waste. The new planning application proposes a restoration landform which will ensure that the completed site protects the mine entrances and blends into the surrounding landscape and provides for ongoing sustainable management by grazing/cutting the grassland.
- 3.2 The stabilisation of the void and creation of additional woodland and grassland area is supported by CCW as an enhancement to the SSSI. The works will also generate income which will support works to ensure the ongoing management of the site for at least 15 years to maximise its value as a conservation resource.
- 3.3 The landscaping proposals involving the importation of soils and excavated materials to provide a landform which will provide for additional woodland open grassland and wetland. The overall objective is to stabilise the quarry walls create areas of sustainable grassland and wetland enhancing the value of the site for wild fauna and flora in particular for foraging of the lesser horseshoe and other bat species. The project will provide revenue to secure 15 years of management for the site.

4.0 Wastes to be Used and Waste Acceptance

- 4.1 It is intended that the stabilisation/restoration/landscaping works are carried out using materials derived from the applicant's activities as described above.
- 4.2 The waste types most likely to be used for the restoration/landscaping works will consist of the following EWC codes: 01 04 08, 01 04 09, 10 12 08, 17 01 01, 17 01 02, 17 01 03, 17 01 07, 17 05 04, 19 12 09, and 20 02 02. The bulk of the material used for stabilisation and the base restoration will be screened subsoil type material with a substantial clay content. The final restoration/landscaping soils will consist of screened subsoils and topsoils suitable for creating calcareous grassland. Soils suitable for the final restoration will be created by some of the initial preparation works and will be stockpiled for use in final restoration/landscaping works other suitable soils will be reserved for this purpose from material delivered to the site.
- 4.3 The waste importation operations will be controlled by the site operators to ensure the landscaping works are carried out according to the following procedures.
- 4.4 Guidance will be given by the site operator to all employees, sub-contractors, other waste carriers and customers regarding the waste types which are acceptable at the site i.e. a copy of the relevant authorisations for the site such as the Environmental Permit and Planning Permission. Where waste is brought in under sub-contract or is delivered by other known hauliers then the carrier registration details will be taken. All haulage operators bringing waste to the site will be periodically checked with the Environment Agency to ensure that they are registered. The procedures below will be followed prior to the receipt of soils on site.
- 4.5 For the protection of the operator and site supervisor any loads containing soil from an industrial site/area must be accompanied by written documentation to demonstrate that the soil is not contaminated. To ensure that only clean loads are accepted the following information will be requested from waste producers (if relevant) at the start of each contract to ensure compliance with the permit requirements (basic characterisation of the waste). The operator reserves the right to refuse such loads and

contact the Environment Agency where necessary (prior to acceptance of the loads) to ensure that the load is acceptable.

- (i) A site investigation report, including borehole logs (if available).
- (ii) Waste analyses (if available), including leachability tests.
- (iii) Name and address of the site from which the waste was excavated/produced.
- (iv) Detailed waste description, including EWC code.

4.6 All incoming vehicles are required to report to a designated representative of the operating contractor. The details of the load will be recorded and the duty of care note/company documentation will be further checked by the operator to ensure that the load is acceptable at the site, including a visual check prior to the vehicle proceeding to the tipping area. Any deviation from the procedures or problems with any loads will result in tipping facilities being suspended for the offending company. Loads which are not acceptable within the above terms will be rejected and returned to the producer.

4.7 The nature of bulk loads makes full inspection difficult until the load is deposited. If unauthorised waste is discovered the load will not be tipped and will be rejected by the operator and returned to the producer.

4.8 If the load is acceptable the driver will be instructed to deposit it at the working area. If the load is found to be unacceptable after deposit and visual inspection it will be reloaded and removed from the site.

4.9 The following details will be recorded for every load of waste deposited at the site:

- (i) The date and time of delivery.
- (ii) The name and address of the waste producer.
- (iii) The type and quantity of waste (in tonnes).
- (iv) The carrier's name/driver name.
- (v) Vehicle registration No.
- (vi) Signature of person inspecting the waste.

The details will be recorded on specific forms and/or controlled waste transfer notes.

- 4.10 The following details will be recorded for all deposits of unauthorised waste at the site and will be forwarded to the Environment Agency at the discretion of the operator:
- (i) Date and time of deposit.
 - (ii) A description of the waste.
 - (iii) The quantity of waste (in tonnes or cubic metres).
 - (iv) Name, address and telephone No. of waste producer.
 - (v) The carrier's name, registration number and vehicle registration.
 - (vi) Reason for the rejection of waste and action taken.
- 4.11 Visitors to the site will be required to sign the visitors book in the site office upon arrival and exit stating the purpose of their visit and whom they represent.

5.0 Amount of Waste Required

- 5.1 The total area of Cambrian Quarry is 7.3 Ha, the new Planning Application covers an area of 4.8 Ha and the area of infilling is approximately 2.8 Ha. The amount of waste required to complete the restoration/landscaping works is estimated as 410,000 m³ of material required to complete to the proposed contours.
- 5.2 The restoration proposals within the new planning application will be agreed with the planning authority (Flintshire County Council), Countryside Council for Wales (CCW) and the AONB joint committee to achieve a good restoration profile both stabilising the site and securing a sustainable future for the quarry complex as a whole and the SSSI and AONB in particular.

6.0 Substitute for Non-Waste Material

- 6.1 As shown above there is great benefit in the proposed scheme, the two key objectives for the final restoration have been identified which focus principally upon stabilising the site as well as enhancing and diversifying the habitat within the SSSI. The material required to carry out the restoration/landscaping works (e.g. rubble, topsoil, subsoil), which is proposed for use at the site, has a variable waste status dependent on the source of the material and site of use rather than set physical or chemical parameters.
- 6.2 There is consideration of using the CL:AIRE Code Of Practice for this project. A discussion with a Qualified Person for CL:AIRE projects elicited an enthusiastic response to the application of CL:AIRE COP to this type of development. This approach would lead to material identified as suitable for this project being not regarded as waste. Although identical material would be waste if the permitting approach is taken. If a number of very large projects became available the CL:AIRE approach may be pursued.
- 6.3 The CL:AIRE approach arises from the direction given in Paragraph 11 to the preamble in the Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives:
- (11) The waste status of uncontaminated excavated soils and other naturally occurring material which are used on sites other than the one from which they were excavated should be considered in accordance with the definition of waste and the provisions on by-products or on the end of waste status under this Directive.*
- 6.4 The proposed restoration/landscaping can only really be carried out using in the main excavated soils which will be classified as waste if the EA considers a permit is appropriate or not waste if it does not. It is clear from Directive 2008/98/EC that the status of uncontaminated soils and other naturally occurring material as waste remains a matter for conjecture.
- 6.5 All waste materials proposed for use at the site will be sourced from construction/demolition and excavation sites in the surrounding area and therefore

minimising haulage distances to the site and provide a valuable end-use for excavated materials which may otherwise be taken to landfill for disposal.

Restoration/landscaping Methods

- 7.1 The soil on site is nutrient poor and alkaline in character. Large areas of the site have been subject to spoil tipping from the past quarrying and mining operations on site and these have naturally regenerated to a mixture of grassland scrub and woodland. It is clear from the SSSI citation that it is desirable to maintain and manage the site to provide a mixture of habitat whilst protecting the bat roosts to provide foraging areas and links to surrounding areas of habitat.
- 7.2 The importation and subsequent restoration will be phased to ensure that the site is gradually restored. Guidance from CCW on the best methods for habitat creation on restored areas and long term management to maintain diversity will be sought and used to produce a restoration and management scheme. The applicant is aware that use of native species is essential but that even then, those used need to reflect local variants as far as is practicable.
- 7.3 Soils will be stored in a manner which protects soil structure and organic content, avoiding compaction and development of anaerobic conditions within the soil mass.
- 7.4 The upper 1,000 mm of the soil profile will comprise a minimum of 150 mm topsoil and 6-850 mm subsoil. Coarse fill materials may be used below this layer to facilitate drainage i.e. stone, hardcore etc.
- 7.5 All works involving the movement and working and storage of soil will be carried out in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites published by DEFRA.
- 7.6 The surface layer of the final profile will be ripped at a tine spacing of 300 mm, or less, to a depth of 300 mm. This will aid drainage, prevent compaction and provide a sustainable growing media for planting and grass establishment.
- 7.7 Completed areas will be prepared in accordance with the restoration management plan. Further cultivation will take place if required to provide a suitable seed bed. Following

establishment, the site will be managed in accordance with the agreed management plan.

- 7.8 The materials placed for stabilising the high walls will be deposited and compacted in accordance with an engineering plan to ensure the quarry walls have good support. The guidance of the engineer will be followed in the types of waste selected for use in stabilisation works.

8.0 Conclusion

- 8.1 The proposed landscaping works will have a clear benefit for the site to enable the stabilisation and restoration of a currently dangerous area.
- 8.2 The restoration will also create added diversity within the SSSI boundary providing the opportunity to enhance the site for foraging by the lesser Horseshoe Bats and a range of other species.
- 8.3 All restoration works will be carried out in accordance with a restoration and management plan which will include maintenance and aftercare agreed with CCW and the Local Minerals and Planning Authority. This scheme will provide management of grassland, woodland, and wetland. It will provide management of vegetation cover as appropriate for each intended habitat and will include reseeding and/or replanting in the event of failure during the statutory aftercare period.
- 8.4 The Cambrian Quarry site, once it has undergone restoration, will be an area combining the conservation of nationally rare bats with enhanced and assured future management. The site will be made safe and stable and will be visually in-keeping with the surrounding mix of grassland scrub and woodland.