MODERN CONDITIONS FOR MINERAL EXTRACTION AND RESTORATION AT PITSFORD-BOUGHTON-MOULTON; CONSENT NUMBER 31M

APPROVED WORKING PLAN - PITSFORD QUARRY

NB The Working Plan assumes the retention of the water and gas mains undisturbed, on the understanding that Anglian Water and Transco are required, by legislation, to pay compensation for the minerals which will be sterilised. These authorities have the right to move the services, rather than paying compensation, thus allowing the minerals to be worked. In this event, the restoration contours will be amended accordingly.

Site operations:

The site will be run in compliance with the regulations of the Mines and Quarries Act. The operations are covered by the Peter Bennie Limited quality system, the procedures in which have been approved in accordance with the requirements of ISO 9002 and are covered by Certificate Number 5972/2 dated 5 January 1995 issued by National Quality Assurance Limited. In addition, the Company will carry out a COSHH and risk assessment for the site.

Mineral working:

The mineral to be worked is, on average 5 metres in depth, lying beneath 1 metre depth of topsoil and subsoil.

The mineral is to be excavated using an excavator which sits on top of the deposit; it will lift the mineral from the deposit into a dump truck, which will transport the mineral to the crushing and screening plant which will operate on a fixed site within the site compound. The compound will be established on the ground floor of the old quarry, at a level 3 to 4 metres below the surrounding restored ground. The area of the compound will be extended south after excavation has removed the abandoned face and proceeded into Phase 1.

The mineral will be moved into stockpiles within the compound and the mineral waste will be moved directly to the areas being restored. The stockpiles will not exceed 5 metres in height.

The mineral is to be worked from an advancing face, which will follow the route shown by the arrows on DWG No PIT/W/5 REV C. The working will be continuous, with approximately 6 hectares being excavated each year and 6 hectares being restored each year.

Aggregate will be imported to the site to mix with the graded mineral to improve the overall strength of the local material, thus enabling a higher proportion of the mineral to be beneficially used. It will also extend the range of opportunities within the market for the sale of the material. The aggregate will be imported as backloads in otherwise empty lorries, therefore this activity will not lead to the generation of any additional lorry movements.
Topsoil, and if necessary subsoil, will be employed in the construction of the bunds and any surplus will be used in areas being restored. The materials will be moved directly to the areas being restored, once the working area has moved forward and new bunds have been constructed.

Recent rates of extraction at Boughton Quarry have averaged 200,000 tonnes per annum. The materials are moved from site on 8 wheel, 32 tonne lorries carrying approximately 20 tonnes per load. Averaged over 50 weeks, this gives 200 lorry loads per week.

Site infrastructure:

There is to be a surfaced access road of 780 metres into the site, which will be constructed before the mineral extraction commences. It will be 7.3 metres wide at the entrance to the site and for a distance of 70 metres into the site; it will then be 4 metres wide with passing places.

Haul roads will not be required, as the dump trucks are able to traverse any part of the exposed mineral layer. A route from the working area to the compound will be kept free of soils, so that passage over restored areas can take place. Soil replacement will only take place upon completion of the excavation. This route will follow a line along the southern boundary of the excavation.

Within the site compound, the site office will comprise two portable cabin buildings with electricity supplied by generator. Washroom and toilet facilities and a telephone will be available on site. A portal frame building will be provided for the maintenance and repair of quarry vehicles, including delivery lorries; it will measure 30m by 25m; 7m to the eaves and 8m to the ridge. An area is to be laid out adjacent to the site office for car parking with a capacity of 10 cars, for use by staff and visitors and for lorry parking for 20 vehicles.

A weighbridge and wheelwash facility will be installed within the area of the site compound.

Noise Control:

Background noise levels have been established from survey work in and around the site. Acceptable noise levels at noise sensitive sites have been interpreted in the light of the criteria set out in MPG 11.

Measures to mitigate the effects of noise on Fox Covert Hall will require the construction of a 3 metre high bund along the western boundary of the site, once the workings come within 115 metres of the property.

Measures to mitigate the effects of noise on the residential properties at Bunkers Hill Farm will require the construction of a 6 metre high screen along a line 20 metres from the properties, once workings come within 140 metres. It is proposed that this screen be comprised of a bund 4 metres high, with a 2 metre close boarded fence along its apex.
Excavation will take place up to 40 metres from the buildings.

During the working of Phase 4 when the face is to be worked southwards adjacent to Spectacle Lane and within 100 metres of Spring Meadow Farm, a temporary 4 metre high bund will be constructed between the face and the properties on Spectacle Lane, with its apex not more than 15 metres from the face and the ends of the bund will extend beyond the end of the face by at least 10 metres, with no gaps. Excavation will take place up to 40 metres from this property.

During the working of Phase 5a, a bund 4 metres high, with its apex not more than 10 metres from the edge of the workings, will be constructed for a length of 300 metres from Spectacle Lane, to screen the properties on Spectacle Lane. For the short period of time during working within 70 metres of the Spring Meadow Farm, the acceptable noise level of $54 \text{ dB}_{Aeq,1hr}$ will be exceeded. When this higher level of noise is to occur, the operator will inform the local residents:
   a) that the noise levels will be temporarily high;
   b) of the reason for the raised levels;
   c) of the likely duration of the activities giving rise to the raised levels and
   d) of the name and telephone number of a contact within the operator’s organisation.

A bund 3 metres high will be constructed along the northern boundary, to screen Stud Farm.

During the working of Phase 5b, a temporary bund will be constructed when the workings come within 110 metres of Stud Farm Cottages, this bund to be 5 metres high and its apex 15 metres from the Cottages and the ends of the bund will extend beyond the end of the face by at least 10 metres, with no gaps. This will allow excavation to within 30 metres of the properties. The protection of Spring Meadow Farm, when excavation comes within 100 metres, can be achieved with a 4 metres high bund along the southern and eastern boundaries for a distance of 60 metres in each direction.

Dust Control:

After the wheelwash, the distance travelled by lorries from the working quarry area to the highway, along 100 metres of surfaced roadway and 680 metres of stoned roadway will be sufficient to ensure that no mud is deposited on the public highway.

*The Mineral Planning Authority should be aware of the difference between mud and ironstone stained water on the highway.*

A vacuum road sweeper will be used to keep the access road clear of dust from the vehicle movements, on a regular basis. The sweeper contains a dust suppression unit which is integral to its operation.

The extraction and crushing operations will not generate dust as the rock is processed whilst damp. Dust on the compound floor will be controlled by means of a dust suppression unit which is kept at the site. It is to be used at regular intervals during each day when
required. It contains a high pressure unit which sprays water as it travels around the site.

The mineral will be stored in stockpiles of different sizes, having been graded by the screening plant. The stockpiles are to be located on the worked out floor of the old quarry. After creation of the stockpiles, they will be sprayed with water to create a crust to reduce the generation of dust. Subsequently, the stockpiles will be sprayed with water during periods of dry weather.

A dust monitoring scheme will be set up, to establish the baseline levels of dust in the locality of the site. Dust measurements will be carried out in accordance with a scheme to be prepared and approved by the Mineral Planning Authority, during the operation of the site.

Portable floodlighting will be used when natural lighting conditions are inadequate.

**Screening measures**

The compound will be screened by the construction of a 3 metre bund along the south boundary, which will be grassed and kept free of weeds, for the duration of the working operations.

Where boundary hedgerows exist, they will be allowed to grow untrimmed. Where boundary hedgerows do not exist, screening bunds three metres high will be placed along highway boundaries to the site to prevent short distance views into it.

**Conservation stone operation**

The preparation of dressed stone is to be undertaken within the compound area shown on DWG No PIT/W/5 Rev C. The work is to be carried out by hand, using guillotines and axes. Each operator will be stationed in a hut, which has an open front. The huts will be located in a separate compound adjacent to the site compound, but screened from it by means of a bund 5 metres high, constructed of overburden from the quarry site. Stone which is suitable for dressing will be deposited on the quarry floor by the excavator. It will be collected on a daily basis using a tractor with a front loading bucket and it will be transported to the dressing compound. Dressed stone will be stored within the compound, stockpiled separately as walling and building stone. Waste stone will be transported by the tractor back to the main quarry operation, for screening through the mobile plant.
APPROVED RESTORATION SCHEME - PITSFORD QUARRY

Introduction

During the years of extraction and restoration in this locality, Peter Bennie Limited has achieved a consistently high quality of land restoration.

Restoration will rely on the naturally occurring soils, which prior to stripping support arable crops, and which it is hoped within a few years of replacement will be brought back to arable production. In November 1996, Reading Agricultural Consultants, carried out a reconnaissance survey of the area, in conjunction with a detailed survey of the land to the west. The quality of the soils to be disturbed is classed as Grade 3a and 3b; the outcrops of Grade 2 are confined to the parts of the site where the ironstone bed has been washed out and thus will remain unworked.

The existing soil profile in the area to be worked is comprised generally of up to 250 mm of topsoil and 250 mm of subsoil on top of a varying depth of overburden derived from the underlying ironstone. This profile will be reinstated on the restored areas.

Soils

Soil movement
Wherever possible, soils will be moved directly from the stripping area to the area being restored. When it is necessary to construct the noise and screening bunds, soils will be stripped and stored in the form of the bunds. If necessary, to make up the volumes required, overburden will also be placed into the bunds. The topsoil, subsoil and overburden will be stored separately, in accordance with good practice.

The location and design of the bunds is specified in the Working Plan.

No plant or machinery shall cross any area of unstripped topsoil or subsoil except where unavoidable as a result of site operations authorised within the conditions agreed with the Mineral Planning Authority.

Where trafficking is likely to occur it must be kept to an essential minimum and all available topsoil and subsoil stripped from that area prior to trafficking taking place.

Timing
Soils movements are only to be undertaken when the full volume of soil is in a dry and friable condition, i.e. the soil is in a non-plastic state such that severe damage to soil structure can be avoided. Conditions shall be sufficiently dry so that topsoil and subsoil can be separated without difficulty. Generally, this will mean that work will not be undertaken in the winter.

Replacement of soils for each annual phase of working will generally be completed by early autumn, to allow the establishment of a winter sown crop on the land. This will help to reduce the risk of dust during dry periods over the winter and will speed up the rate at
which the soil structure is reinstated.

The soils within the site are relatively dry and thus in suitable weather conditions can be handled by a wide range of machinery.

**Machinery**
A Tracked mechanical excavator will be used for the extraction of the mineral; the same machine will usually be used for the digging of the soils and overburden. The bucket on the excavator will lift the soil materials into a dump truck. The dump truck will then carry the soil to its destination, where it is placed using the backacter arm on the excavator. All soil materials will be handled separately, as stated above. It may be necessary to bring on site a bulldozer and scraper to assist in the soil movement operations.

These processes and the machinery used ensure that the minimum damage to the soil structure occurs.

**Stripping**
Topsoil and subsoil will be stripped and moved and if necessary stored, separately.

**Storage mounds**
Construction of the mounds will not take place during adverse weather conditions, including prolonged dry periods to reduce the risk of dust creation. Where the mounds are to remain in place for more than 6 months, they will be sown with grass seed, to reduce weed infestation and dust generation.

**Soil replacement**
Soils will be replaced to replicate as closely as possible the original profile. If any compaction takes place, the subsoil will be ripped to an appropriate depth after subsoil replacement is complete. This will be carried out using a winged subsoiler at 45 degrees to the restoration contours.

**Stone removal**
Stones over 200 mm in diameter will be removed from the subsoil after ripping. Stones over 100 mm in diameter will be removed from the finished surface.

**Soil improvement**
Lime, farmyard manure and artificial fertilisers will be added in accordance with sound agricultural practice and based on past experience of the detailed site conditions, by Moulton College after the restored area has been handed back.

**Drainage**
The drainage condition of the site will be monitored, assessed and discussed with the Mineral Planning Authority during the aftercare period, in accordance with the aftercare scheme.
**Landscape enhancement**

All existing hedgerows will be re-instated upon completion of the restoration surface.

The proposed hedgerow planting to be a mix of native species common in the locality, in the following proportions:

- Hawthorn (*Crataegus monogyna*) 80%
- Field Maple (*Acer campestre*) 5%
- Hazel (*Corylus avellana*) 5%
- Dogwood (*Cornus sanguinea*) 5%
- Blackthorn (*Prunus spinosa*) 5%
- Rose

Prior to planting, the ground will be cultivated to the maximum practical depth to provide a good rooting medium. Planting will be with either 35-45cm bare rooted transplants individually protected against rabbits with 75cm “Tubex Quills” or similar, or 60-90cm bare rooted transplants unprotected. The decision will depend upon the vermin populations.

Planting will be in a double staggered row 30 cm between rows and 45 cm between plants within the rows.

A number of trees will be interplanted with the new hedgerows. Trees will be 60-90 feathered whips protected with 1.2 metre tree shelters to clearly identify them and to protect them against vermin. Trees will be unevenly spaced. Trees will be planted at the rate of 1 per 50 metres, using the native species set out above.

Planting will be undertaken with top quality stock of native origin where available. All planting will be with bare rooted stock. All plants will be pit planted.

Planting will be undertaken within the season 1 November - 31 March, immediately following the restoration of the area. Planting will be protected by stock proof fencing, if required. Weed competition will be controlled with chemical until satisfactory establishment is achieved. This shall be done in any event for a minimum of three years. Dead plants will be replaced each year, for a minimum of three years.
GENERAL

The objective of the aftercare scheme is to ensure that after the initial restoration of the site to the agreed contours, the land is suitably managed for a period of 5 years to bring it to a satisfactory and acceptable standard and the site achieves maximum agricultural production within a minimum period of time.

Soil conditions will be monitored by Moulton College and, in so far as it practicable, access for livestock and machinery will be restricted in severely wet conditions, so as to avoid damage to soil structure.

Restored land will be assessed annually by Moulton College, with professional advice if necessary, in order to determine the need for and the kind of further remedial works necessary to achieve the overall objectives of the scheme. This could include the implementation of any progressive soil loosening programme, the installation of under-drainage where appropriate and the addition of fertilisers, manures and lime.

It is clearly recognised that good aftercare is in the long term interest of the land and this should ensure that the farming practices of the College and landowner are sympathetic to the special needs of restored land.

OUTLINE STRATEGY

Objectives

The method of soil placement practised in the restoration should result in an adequately fissured, restored soils profile. The main objectives of the aftercare programme are to encourage stabilisation of the existing fissures, to encourage development of smaller, stable, structural units especially in the upper rooting zone of the soil profile and to ensure that the land drains to a standard that will allow continued agricultural use. These objectives will be achieved by the encouragement of the regeneration of biological activity, by appropriate cropping and good management and by further soil loosening and/or the installation of an appropriate under-drainage system which should be reviewed during the aftercare period.

Detailed Proposals

Cropping Pattern

The land will initially be put down to grass, or arable crops, by the College in accordance with its rotational requirements.

Cultivation Practices

Except where deep loosening of the soil profile is necessary, normal agricultural machinery would be used for all cultivations; manuring, sowing, weed and pest control and for
mowing/harvesting.

Initially, the structure of the soils profile on restored land can be fragile and unstable and therefore all land work will be carried out only when the ground is in a suitably dry condition. However, should machine access be required before the ground has had sufficient opportunity to dry out and become sufficiently stabilised only low ground pressure machines will be used to avoid excessive damage to the soil structure.

**Remedial Measures**

Provision will be made for further soil loosening with a winged tine subsoiler to rectify any significant permeability problems arising from soil placement. This will be assessed immediately soil placement has been completed and in subsequent years the need will be subject to agreement following annual reviews of the condition of the restored land during the aftercare programme.

During cultivation the ground surface will be stone picked if necessary to ensure that the soils are as free as practicable of any stones or debris larger than 100mm in any dimension.

Areas of uneven ground caused by differential settlement will be regraded if necessary.

**Fertilisers, Weed and Pest Control**

Lime and fertiliser requirements for the first crop will be based on the results of nutrient and pH analysis of bulk topsoil samples that will be taken after the soil has been replaced. Subsequently, the application of lime, fertilisers and/or manuring will be undertaken according to normal agricultural practice.

Weed and pest control will be carried out as deemed necessary.

**Drainage**

The need for underdrainage will be assessed and discussed with the MPA in Year 2. This will provide a 12 month period for initial ground settlement and remedial regrading.

If a scheme is installed, secondary treatment will comprise subsoiling across the drains to a depth of around 350-400mm.

**Annual Review**

There will be an annual review meeting, usually in the period April/June, between representatives of the Mineral Planning Authority and their advisors, of the operator and the College. Early meetings shall include a site visit but the need for site visits at later meetings shall be agreed as the aftercare progresses. At the annual review meeting a plan will be available showing the area handed back by the operator after restoration during the previous year.

All works undertaken on the land will be recorded in a diary. This will be used to prepare a monitoring report on the land which will be submitted before the aftercare meeting as a basis for on-site discussion.
MODERN CONDITIONS FOR MINERAL EXTRACTION AND RESTORATION
AT PITSFORD-BOUGHTON-MOULTON; CONSENT NUMBER 31M

PITSFORD QUARRY – PHASE 1 ONLY: PROPOSED WORKING PLAN

Site operations:

The site will be run in compliance with the regulations of the Mines and Quarries Act. The operations are covered by the Peter Bennie Limited quality system, the procedures in which have been approved in accordance with the requirements of ISO 9002 and are covered by Certificate Number 5972/2 dated 5 January 1995 issued by National Quality Assurance Limited.

Mineral working:

The remaining mineral to be worked is, on average 3 metres in depth, lying above the underlying clay. A depth of 1 metre of topsoil and subsoil was stripped when the field was prepared for extraction.

The mineral is to be excavated using an excavator which sits on top of the deposit; it will lift the mineral from the deposit into the crushing and screening plant, which will site on top of the remaining deposit at a level 3 to 4 metres below the surrounding ground.

The mineral graded into aggregates will be moved into stockpiles alongside the plant and the mineral waste will be moved directly to the areas being restored. The stockpiles will not exceed 5 metres in height. The stone suitable for processing as building stone will be transferred by bucket loader to the compound area near the weighbridge and offices.

The mineral is to be worked initially from the area shown on Drawing GPP/PB/PR/13/06 Extraction Phases. The reserve of 100,000 tonnes is expected to be worked out during the next 3-5 years dependent upon demand.

The materials are moved from site on 8 wheel, 32 tonne lorries carrying approximately 20 tonnes per load.

Site infrastructure:

There is a surfaced access road of 780 metres into the site, 7.3 metres wide at the entrance tapering to 6m wide to the compound area.

Within the site compound, the site office will comprise two portable cabin buildings with electricity supplied by mains. Washroom and toilet facilities and a telephone will be available on site. A portal frame building is provided for storage use. An area is laid out adjacent to the site office for car parking with a capacity of 10 cars, for use by staff and visitors and for
lorry parking for 20 vehicles. The compound will be re-established in accordance with the layout shown on Drawing GPP/PB/PR/13/04.

A weighbridge and wheelwash facility will be installed within the area of the site compound.

Noise Control:

Background noise levels have been established from survey work in and around the site. Noise limits are set at noise sensitive sites in the locality.

Measures to mitigate the effects of noise on Fox Covert Hall require the construction of a 3 metre high bund along the western boundary of the site; this bund is in situ.

Dust Control:

After the wheelwash, the distance travelled by lorries from the working quarry area to the highway, along 780 metres of surfaced roadway is sufficient to ensure that no mud is deposited on the public highway.

A vacuum road sweeper will be used to keep the access road clear of dust from the vehicle movements, on a regular basis. The sweeper contains a dust suppression unit which is integral to its operation.

The extraction and crushing operations will not generate dust as the rock is processed whilst damp. Dust on the compound floor will be controlled by means of a water bowser, which is kept at the site. It is to be used at regular intervals during each day when required. It contains a high-pressure unit which sprays water as it travels around the site.

The mineral will be stored in stockpiles of different sizes, having been graded by the screening plant. The stockpiles are to be located on the floor of the old quarry. After creation of the stockpiles, they will be sprayed with water to create a crust to reduce the generation of dust. Subsequently, the stockpiles will be sprayed with water during periods of dry weather.

Dust monitoring will take place in accordance with the scheme approved by Northamptonshire County Council.

Portable floodlighting will be used when natural lighting conditions are inadequate.

Screening measures:

The compound is screened by the construction of a 3 metre bund along the south boundary, which is grassed and kept free of weeds, for the duration of the working operations.

The trees and shrubs in the Community Woodland area screen the access road and compound area from views from the highway and properties on the outskirts of Pitsford village.
Soil bunds are in place around the extraction area of Phase 1 to screen the activities from the footpath and residential properties beyond. These bunds are located in the positions shown on Drawing GPP/PB/PR/13/07.

Conservation stone operation:

The preparation of dressed stone may be undertaken within the compound area. The work would be carried out by hand, using guillotines and axes. Each operator would be stationed in a hut, which has an open front. In the event that the conservation stone is not processed on site, it will be taken off-site for processing elsewhere.

The excavator will deposit stone that is suitable for dressing on the quarry floor. It will be collected on a daily basis using a tractor with a front-loading bucket and it will be transported to the dressing compound. If it is being processed off-site, it will be loaded into an 8-wheeler for transport.

Dressed stone would be stored within the compound, stockpiled separately as walling and building stone. Waste stone would be transported by the tractor back to the main quarry operation, for screening through the mobile plant.
PITSFORD QUARRY – PHASE 1: PROPOSED RESTORATION SCHEME

Introduction

Restoration will rely on the naturally-occurring soils, which prior to stripping supported arable crops, and which it is hoped within a few years of replacement will be brought back to grassland. In November 1996, Reading Agricultural Consultants carried out a reconnaissance survey of the area, in conjunction with a detailed survey of the land to the east. The quality of the soils disturbed is classed as Grade 3a and 3b; the outcrops of Grade 2 are confined to the parts of the site where the ironstone bed has been washed out and thus will remain unworked.

The existing soil profile in the area worked was comprised generally of up to 300 mm of topsoil and 700 mm of subsoil on top of the underlying ironstone. This profile will be reinstated on the restored areas, by replacing soils as described below.

The finished contours of the site will conform to those shown on Drawing GPP/PB/PR/14/08, which have been designed to ensure surface water drainage, maintenance of a permanent water feature with the ability to recharge the groundwater flow to the south and to allow use by modern agricultural machinery. The surface will be left so that it is free from the risk of ponding and capable of receiving an effective artificial drainage system if this is found to be necessary.

Drawing GPP/PB/PR/14/08 also shows the areas of the site restored to different end uses; grassland, pond, tree planting, retained soil bund and sand martin nests and mosaic habitat compensation.

Restoration will take place once mineral extraction has been completed and will start at the south of the site and work in a northerly direction. The work will be undertaken in one phase, lasting approximately three-six months, dependent upon the weather conditions.

Soils – to be handled in accordance with MAFF’s Best Practice Guidelines

Soil storage

All soils have been retained in storage bunds around the perimeter of the site, for use in restoration. The topsoil and subsoil have been stored separately, in accordance with good practice.

The bunds are to remain in place until the soils are required for final restoration. They will be managed to reduce weed infestation and dust generation.

Timing

Soils movements are only to be undertaken when the full volume of soil is in a dry and friable condition, i.e. the soil is in a non-plastic state such that severe damage to soil structure can be avoided. Generally, this will mean that work will not be undertaken in the winter.
Replacement of soils will generally be completed by early autumn, to allow the establishment of a winter sown crop on the land. This will help to reduce the risk of dust during dry periods over the winter and will speed up the rate at which the soil structure is reinstated.

The soils within the site are relatively dry and thus in suitable weather conditions can be handled by a wide range of machinery. In the event that restoration is commenced but not completed by the autumn/early winter due to wet weather, the surface will be temporarily seeded to provide some ground cover to aid the drying out of the soil in the spring.

**Machinery**

A tracked mechanical excavator will be used for the extraction of the mineral. All soil materials were handled and stored separately, as stated above. It may be necessary to bring on site a bulldozer and scraper to assist in the soil movement operations.

These processes and the machinery used ensure that the minimum damage to the soil structure occurs.

**Ground preparation**

Prior to the re-spreading of soils, the upper 500mm of the surface will be prepared so that it does not contain toxic material injurious to plant growth. The surface will be ripped at a spacing of 500mm to remove rock, stone or boulders and compacted layers, to facilitate drainage.

**Soil replacement**

Soils will be replaced to replicate as closely as possible the original profile. If any compaction takes place, the subsoil will be ripped to an appropriate depth after subsoil replacement is complete. This will be carried out using a winged sub-soiler at 45 degrees to the restoration contours, ad a spacing of 500mm and a depth of 500mm.

**Stone removal**

Stones over 200 mm in diameter will be removed from the subsoil after ripping. Stones over 100 mm in diameter will be removed from the finished surface.

**Remedial work**

In the event that localized settlement of the surface occurs, following completion of restoration, the surface will be re-graded. During this operation, topsoil, subsoil and any mineral waste will be kept separate, to avoid degradation of the soil layers.
PITSFORD QUARRY– PHASE 1: PROPOSED AFTERCARE SCHEME

General

The objective of the aftercare scheme is to ensure that after the initial restoration of the site to the agreed contours, the land is suitably managed for a period of 5 years to bring it to a satisfactory and acceptable standard for the establishment of grassland and features of ecological value.

Soil conditions will be monitored and, in so far as it practicable, access for livestock and machinery will be restricted in severely wet conditions, so as to avoid damage to soil structure.

Restored land will be assessed, with professional advice if necessary, in order to determine the need for and the kind of further remedial works necessary to achieve the overall objectives of the scheme. This could include the implementation of any progressive soil loosening programme, the installation of under-drainage where appropriate and revised management of the different habitats.

It is clearly recognised that good aftercare is in the long term interest of the land and the newly created habitats and this should ensure that the management practices are sympathetic to the special needs of restored land.

Objectives

The method of soil placement practised in the restoration should result in an adequately fissured, restored soils profile. The main objectives of the aftercare programme are to encourage stabilisation of the existing fissures, to encourage development of smaller, stable, structural units especially in the upper rooting zone of the soil profile and to ensure that the land drains to a standard that will allow continued agricultural use. These objectives will be achieved by the encouragement of the regeneration of biological activity, by appropriate management and by further soil loosening and/or the installation of an appropriate under-drainage system, which should be reviewed during the aftercare period.

Cropping Pattern

The land will be put down to permanent grass, where it is not being incorporated into ecological habitat areas.

Cultivation Practices

Except where deep loosening of the soil profile is necessary, normal agricultural machinery would be used for all cultivations; sowing, weed and pest control and for mowing.

Initially, the structure of the soils profile on restored land can be fragile and unstable and therefore all land work will be carried out only when the ground is in a suitably dry condition. However, should machine access be required before the ground has had sufficient opportunity to dry out and become sufficiently stabilised only low ground pressure machines will be used to avoid excessive damage to the soil structure.
Remedial Measures

Provision will be made for further soil loosening with a winged-tine subsoiler to rectify any significant permeability problems arising from soil placement. This will be assessed immediately soil placement has been completed and in subsequent years the need will be subject to agreement following annual reviews of the condition of the restored land during the aftercare programme.

During initial cultivation the ground surface will be stone picked if necessary to ensure that the soils are as free as practicable of any stones or debris larger than 100mm in any dimension.

Areas of uneven ground caused by differential settlement will be regraded if necessary.

Fertilisers, Weed and Pest Control

Due to the requirement to restore the land to grassland, the application of fertilisers is unlikely to be necessary.

Weed and pest control will be carried out as deemed necessary.

Drainage

The need for under-drainage will be assessed and discussed with the MPA in Year 2. This will provide a 12 month period for initial ground settlement and remedial re-grading.

If a scheme is installed, secondary treatment will comprise sub-soiling across the drains to a depth of around 350-400mm.

Annual Review

There will be an annual review meeting, usually in the period April/June, between representatives of the Mineral Planning Authority and their advisors, of the operator and the College. Early meetings shall include a site visit but the need for site visits at later meetings shall be agreed as the aftercare progresses.

All works undertaken on the land will be recorded in a diary. This will be used to prepare a monitoring report on the land, which will be submitted before the aftercare meeting as a basis for on-site discussion.

At the annual review meeting a plan will be available showing the area handed back by the operator after restoration during the previous year.