Please see Annex RN9 for supporting information, and the “Introduction” for Health and Safety considerations and advice on the use of the guidance.

1. **Remedial Issues**
   As part of the restoration process carried out in accordance with the restoration condition, are there any remedial actions and/or issues which need to be considered prior to the commencement of aftercare.

2. **As part of the compliance with the restoration condition, the site should be checked for**
   - stone content and distribution in the restored soil profile
   - foreign objects within the soil profile
   - whether the areas and shape of the restored land are conducive to the commencement of aftercare
   - is the restored area now more vulnerable to trespass etc
   - is the restored profile as per the planning permission and if applicable, in accordance with the Statement of Physical Characteristics Report
   - the restoration contours are as agreed

**COMMENTS**

**For more detailed information see:**
- Agricultural Land Classification of England and Wales (MAFF 1988)

**Cross references:**
- AP 5, 6, 7, 8, 10, 11
- RN 8
1. Remedial Issues

As a result of the requirement of the restoration condition, it is essential to establish whether any remedial works are necessary before agreeing the commencement of the formal aftercare period. Although the aftercare period itself will provide opportunities for remedial works to be carried out, once aftercare cropping is in progress, the window of opportunity for carrying out such works is greatly reduced if crop damage is to be minimised, or the timing of normal agricultural operations is not to be delayed.

2. As part of the compliance with the restoration condition, the site should be checked for:

   a. stone content and distribution in the restored soil profile
      Stones of various shapes and sizes within the restored profile cannot only cause costly damage to farm machinery and thus perhaps delay vital cultivations, but their presence also reduces the water holding capacity of the soil, which in turn has a direct and adverse effect on crop growth. It is important, therefore, that where the original soil is used for the restoration, it is not contaminated from an external source i.e., the stone content following restoration should be no greater than which existed prior to the soil being disturbed.

      Where restoration is dependent upon imported soil, there may be a degree of control of stone content, either in being able to choose the source of the material, or if a number of sources are available, managing the incoming material so that the stonier material is placed as deep as possible within the restored profile, or by screening the soil.

      If doubts exist about the stone content of a restored profile where in-situ soil has been used, it may be possible to look at the soil details submitted as part of the planning application. If an ALC survey was undertaken to determine land quality, a stone content assessment would have been part of that process, and the report will provide the necessary detail. Additional information may be available if a Statement of Physical Characteristics Report has been prepared. With such background information it is then a relatively straightforward task to make a ‘before and after’ assessment.

   b. foreign objects within the soil profile
      These are usually a result of the soil being contaminated from an external source. This type of contamination may include wire, cables, concrete, metal posts, bricks, household waste etc. The damage to both equipment and people by these materials can be significant and they should be removed from the site before normal (agricultural) operations commence. Once removed, they must of course be disposed of appropriately. If it is considered that these materials are also located within the soil profile, repeated deep ripping may be required, followed by the removal of materials brought to the surface. Clearly, it is better if
the potential danger of contamination is identified at the outset and action taken accordingly.

c. whether the areas and shape of the restored land are conducive to the commencement of aftercare
The commencement of aftercare is commensurate with the re-introduction of normal agricultural operations using standard agricultural equipment. It is important, therefore, that the process of restoring land acknowledges this fact and leaves an area fit, in all respects, for such operations to be carried out without hindrance. This includes not only the condition of the restored surface, but the shape of the restored area: irregular shapes can be extremely difficult to manage agriculturally (cultivate, fertilise, spray, harvest etc), and the cost of doing so will be a reflection of these difficulties. Reference to the phasing plan and working/restoration scheme should give clear guidance. Where remedial works are considered necessary, these should only be carried out when the risk of damaging the soil surface/profile is at a minimum and normal soil handling and trafficking best practice should apply. This could lead to a period of significant delay, especially if the site has to overwinter before any work can be carried out, or if sowing is delayed in the autumn as a result of work being carried out during the summer.

d. is the restored area now more vulnerable to trespass etc
Newly restored land often has an open, unused and unmanaged appearance. Where this occurs adjacent to or near the public highway, it can prove a strong attraction to joyriders, motorcyclists, travellers, fly-tippers etc. While it is simply not possible to deter all such types, the attraction does lessen once it is clear that the land is being used. It obviously helps if boundary ditches and/or hedges/fences are installed during the restoration process, or as quickly as possible afterwards.

e. is the restored profile as per the planning permission and if applicable, in accordance with the Statement of Physical Characteristics Report
At this latter stage of completing the restoration condition, this is perhaps one of the last remaining opportunities for significant remedial works to be carried out prior to the commencement of aftercare. Whatever the proposed after-use, the restoration condition will have required a specified restored soil profile depth. If BMV agricultural land is involved, it may be that a comprehensive pre-working soil description was submitted, viz... a Statement of Physical Characteristics Report. The restored profile can be checked by either hand-digging a profile pit, or requiring the contractor to use on site equipment (Hydraulic Excavator etc.), so that a number of pits are available across the site in advance of an inspection being made. Alternatively, hand augering can be carried out. The latter method will allow a higher density of observations to be made in a given time. Normally, it will simply be a case of measuring the total depth of the restored profile and identifying the soil layers - topsoil and subsoil(s). Topsoil is usually much darker than the subsoil due to the higher organic matter content, and the point at which the two soil layers meet therefore is often quite clear. It is then simply a case of
measuring the restored soil depths and comparing them with the pre-working survey.

Soil textures may also be important and specialist advice may be necessary should a dispute arise. However, if the Soil Physical Characteristics Report indicated, for example, a sandy texture and the restored profile contains soil of an obviously clayey nature or, vice versa, it will be clear to the non-soil specialist that the restoration condition has (to a degree which will need to be assessed) not been fully complied with.

Where imported and/or screened soil is used in the restoration, then clearly there is likely to be a greater variation in the soil profile textures and layer depths across the site than where in-situ soil is used. This will especially be the case where the soil is sourced from a variety of places. In such circumstances, a considerable degree of flexibility will be required when assessing the restored profile.

In cases where BMV agricultural land is involved, the long term potential of the land may well be compromised if the restoration condition is not fully complied with.

f. the restoration contours are as agreed
Although the final topography of the site may well be as proposed, this does not necessarily mean that the final levels in relation to Ordnance Datum are correct. This is particularly important where the final levels, and perhaps levels on adjacent (and possibly undisturbed) land, need to complement each other in order to allow a drainage system to be installed. In addition, frost (air) drainage needs to be taken into account particularly where soft fruit/orchards are involved. Contours which do not allow frost pockets to drain away can cause significant crop damage and losses. The impact of new contours can have a significant impact on both land upslope and downslope of the restored areas. The operator should be able to provide details of the final levels - indeed, they cannot be achieved without the relevant survey work being carried out. For sites filled with putrescible waste, post-settlement gradients should be no flatter than 1 in 25 to ensure adequate drainage and to minimise ponding in the event of localised differential settlement (Waste Management Paper (WMP) 26B Landfill Design, Construction and Operational Practice (DoE 1995) para.6.5). Sites to be managed as bio-reactors for accelerated stabilisation have special design requirements with intensive landfill gas and leachate controls enabling leachate to be re-circulated (see Waste Management Paper (WMP) 26B Landfill Design, Construction and Operational Practice (DoE 1995) Appendix D). The management of these sites may bring advantages such as more rapid stabilisation in terms of settlement and landfill gas production, but disadvantages in terms of rapid settlement and the need for associated remedial works. These problems may be reduced by adopting an interim restoration approach (see Waste Management Paper (WMP) 26E Landfill Restoration and Post Closure