

# Detailed guide: Cemeteries and burials: prevent groundwater pollution

*Updated:* Added 'unaltered or unweathered' to make it clear that graves must not be dug in unaltered or unweathered bedrock.

Burials must not pollute groundwater. Groundwater can be at risk of pollution from burials where the numbers are sufficient and if the site is in a sensitive or vulnerable area. Measures to prevent or limit pollution must be appropriately considered, given the sensitivity and risks posed.

The [Environment Agency's groundwater position statements](#) explain government policy on the burial of human and animal remains.

## **Human and animal burials: minimum groundwater protection**

A burial site must be:

- outside a [source protection zone 1](#) (SPZ1)
- at least 250 metres from any well, borehole or spring supplying water for human consumption or used in food production – for example at farm dairies
- at least 30 metres from any spring or watercourse not used for human consumption or not used in food production
- at least 10 metres from any field drain, including dry ditches

Different rules apply for:

- [home burials of a person](#) or larger domestic [pet animal](#) – the minimum distance is 50 metres from any well, borehole or spring supplying water for human consumption or used in food production purposes, including [private water supplies](#)
- [home burials of domestic pets](#) – there are no minimum groundwater protection requirements
- mass emergency burials with a risk of disease carried by groundwater – the zone may extend to [source protection zone 2](#) (SPZ2)

All graves must:

- have at least 1 metre clearance between the base of the grave and the top of the water table – they shouldn't have any standing water in them when dug
- not be dug in unaltered or unweathered bedrock
- not be dug in areas susceptible to groundwater flooding
- be deep enough so at least 1 metre of soil will cover the top of the coffin, body or animal carcass

Always allow for any potential rise in the water table, including seasonal variations and extreme rainfall.

The Environment Agency can take action if large numbers of burials, either as a single event or over a period of time, affect or could affect groundwater quality.

Burials can result in the discharge of [hazardous substances](#) and [non-hazardous pollutants](#) to groundwater. They are therefore covered by the requirements of the Groundwater Daughter Directive 2006/118/EC as implemented by the Environmental Permitting Regulations.

The Environment Agency may serve a works notice under section 161A of the Water Resources Act 1991 and the Anti-Pollution Works Regulations 1999 to prevent or seek remedial action for pollution of controlled waters.

In addition to the requirements set out in this guide, you may need to monitor groundwater before burying animal or human remains. Find out what you need to monitor in the [cemeteries and burials groundwater risk assessment guidance](#).

## Burials below the water table

Burials must not cause pollution and therefore shouldn't take place below the water table. Burials below the water table limit the capacity for attenuation and there must be no direct input of [hazardous substances](#) to groundwater. Therefore, some sites with existing planning permission, such as existing cemeteries, may need some form of intervention to control groundwater levels. For example, artificial drainage and abstraction for removal.

You must collect any artificially drained groundwater, treat it as contaminated, and dispose of it as foul water. You'll need an [environmental permit](#) to carry out these actions unless you have permission to discharge to mains foul drainage. [Contact your local sewerage provider](#) in these cases.

Until there is more information about the effect of any new method for managing burials close to, or below, the water table, the Environment Agency will want to see:

- a [hydrogeological assessment](#) of present and future risks
- plans for continued checks of the site including long-term [monitoring](#)

For human burials, this includes the use of sealed caskets.

## Disposal of ashes

You don't need permission to scatter ashes from a single cremation on your own land, or make any formal record of doing so. You should seek permission from the landowner if you want to scatter ashes on someone else's land.

If you're spreading ashes across surface water you should avoid casting wreaths or other memorabilia – they may harm the environment, including

wildlife.

Crematoria owners and managers must carry out a site-specific [risk assessment](#) if ash is scattered at their sites.

Find out if you need a [permit to bury or spread ash at pet cemeteries](#).

## Human home burials

If you want to bury individual human remains at home, you must:

- fill in a burial authorisation form before the burial takes place – [contact your local council](#) for the form
- record the burial in a land burial register
- follow the [minimum groundwater protection requirements](#)

You should also make a clear, detailed plan showing where the burial took place, and keep this with the deeds of the property or land.

## Green burial sites

Green burial sites are often in areas such as woodlands, nature reserves and gardens.

Site managers and owners must follow [minimum groundwater protection requirements](#).

Contact the [Natural Death Centre](#) to find out how to arrange a green funeral.

## Existing cemeteries

Manage existing cemeteries to limit environmental impact. For example, use methods such as artificial drainage to reduce the risk and meet the minimum requirements where possible.

Any extension to an existing site must comply with the [requirements for new cemeteries and extensions](#). All existing sites should have an appropriate [risk assessment](#).

## New cemeteries and extensions

Any new cemetery or extension to an existing site, including grave plot reuse and 'lift and deepen' methods, must:

- comply with [minimum groundwater protection requirements](#)
- pose no unacceptable risk to groundwater used for drinking water and food production purposes

As a minimum you must do a [tier 1 risk assessment](#) to evaluate the potential harm to groundwater from pollution.

Local councils control new cemetery and extension applications through

planning laws, and the Environment Agency is a statutory consultee for potential groundwater pollution.

The Town and Country Planning Act and Regulations (various dates) have provisions allowing the control of development and land use, including cemeteries. Planning conditions may be set to protect groundwater.

The Environment Agency considers sites with the potential for 100 burials a year or more to be high risk. These sites will need detailed evidence to show both:

- sufficient depth to the water table or that natural formations offer protection
- proposed engineering and management methods to prevent unacceptable groundwater pollution

You may also have to carry out regular [monitoring](#) to ensure the risk of groundwater pollution stays acceptable. How often, and what checks, depends on:

- cemetery size and rates of use
- results of the [risk assessment](#)
- hydrogeological characteristics
- ongoing results of the monitoring

The Environment Agency expects you to limit your cemetery's environmental impact, such as phasing burials to reduce the concentration of substances and organisms.

## **Arrangements for human burials in emergencies**

During an emergency situation, such as a health epidemic or disaster, it's a priority to keep sources of drinking water safe from contamination.

Emergency planners should always try to use alternatives to burial for body disposal, such as cremation. Plans for using existing cemeteries, or land reserved for new cemeteries, must not affect the quality or safety of groundwater or any other water supplies.

Any temporary morgue or mortuary must be able to contain bodily fluids, microbes, substances and chemicals. This may involve sealing drains for safe collection of liquids for later removal by a specialist contractor.

During such emergency situations, if groundwater is at risk, then the minimum groundwater protection requirement of being outside an SPZ1 may be extended to SPZ2.

## **Animal burials**

Different rules apply for:

- [domestic pets](#)

- [pet cemeteries](#)
- [livestock and wild game](#)

If you're burying wild animals (except wild game) you must follow the [minimum groundwater protection requirements](#).

## **Domestic pets**

You don't need permission to bury domestic pets.

You can bury small domestic pet animals such as a dog or a cat on your own land, for example in your back garden. There are no minimum groundwater protection requirements.

If you want to bury a larger pet animal such as a pet horse follow the [minimum groundwater protection requirements](#).

For these larger pet burials contact your [local council's animal health office](#). Your local council may ask for a map marking the burial place or they may have additional requirements .

## **Pet cemeteries**

Owners and managers of pet cemeteries should comply with:

- [minimum groundwater protection requirements](#)
- the Animal By-products (Enforcement) (England) Regulations 2013
- the voluntary code of practice of the [Association of Private Pet Cemeteries and Crematoria](#)

You must also register your pet cemetery with the Animal and Plant Health Authority. Find out [where you can build pet cemeteries and how to register them](#).

## **Livestock and wild game**

You must not bury on-site any animal kept as livestock or that's wild game. This includes animals at farms, zoos and similar places. You can dispose of them by:

- commercial incineration and rendering
- landfill – the site must have the correct environmental permit for animal carcasses

Under normal circumstances, the burial of fallen stock is prohibited by the Animal By-products (Enforcement) (England) Regulations 2013. A relaxation from this rule (a 'derogation') applies in the Isles of Scilly.

Find out the rules on [burying or burning fallen stock](#) so you can safely dispose of dead animals.

## **Animal burials in emergencies**

The government may relax the laws preventing on-site burials of animals kept as livestock and wild game during extreme events. For example, during a widespread outbreak of foot and mouth disease. You must consider the risk to groundwater – the [minimum groundwater protection measures](#) still apply.

Emergency conditions and time pressures mean only quick, simple risk assessments are possible. This limits burial permissions. Farm managers must have no other means available for disposal before considering burial.

### **Animal burials: pollution risk**

The potential for disease transmission may mean the burial exclusion zone applies to both [SPZ1 and SPZ2](#). The risk of pollution is site-specific and depends on a number of issues.

### **Animal carcass type and number**

Large volumes of carcasses pose a greater hazard, especially in areas close to principal aquifers. These may have to go to existing landfill sites with permits to handle animal waste.

### **Risk of contamination and spread of pathogens**

If this is a concern then you'll need to limit use of groundwater for drinking water, food production purposes and livestock watering.

### **Burial method and proposed site**

Burial in unlined pits under emergency conditions will affect groundwater quality.

### **Surrounding geology**

Areas with permeable deposits may result in a greater risk to the underlying groundwater. Areas of low permeability present a higher risk that contaminated water will build up and present a hazard to surface water.

### **Depth to the water table**

You should allow for any potential rise in the water table. There must be no direct input of hazardous substances to groundwater and non-hazardous pollutants must be limited to avoid pollution.

### **Current and potential use of groundwater**

As well as the risk to any current use of groundwater, over time the burial is likely to remain an active source of contamination so this may limit future use of groundwater. You need to avoid causing pollution to groundwater resources in future.

## Emergency animal burial by weight

There are different requirements for the emergency burial of animal carcasses based on the animals' weight.

### Less than 2 tonnes

You don't need permission from the Environment Agency for burials of less than 2 tonnes, but you should follow the [minimum groundwater protection requirements](#).

You can carry out more than 1 burial a year, providing:

- no single burial exceeds 2 tonnes
- the burial sites are at least 500 metres apart
- the total weight of all carcasses buried is no more than 8 tonnes

### Between 2 and 8 tonnes

Contact your [local Environment Agency office](#) for burials between 2 and 8 tonnes. It will work with you to:

- assess the risk of groundwater pollution
- decide if burial is safe
- advise if you need an environmental permit

### Over 8 tonnes

You must have [an environmental permit](#) before burying animal carcasses over 8 tonnes. Contact your [local Environment Agency office](#) for further information for burials over 8 tonnes.

If the burials exceed 50 tonnes you will also need to show comprehensive plans for engineered containment and site management during and after burial.

For more information on emergency burials read Section M of the [groundwater protection position statements](#).

You may have to follow the [groundwater monitoring](#) rules for animal carcass burials.

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## [Guidance: Groundwater protection position statements](#)

*Updated:* Updated The Environment Agency's approach to groundwater protection.

These position statements describe the Environment Agency's approach to managing and protecting groundwater. They update Groundwater protection: principles and practice (GP3).

This document helps anyone whose current or proposed activities have an impact on, or are affected by groundwater such as:

- developers
- planners
- environmental permit applicants and holders
- water abstractors

Many of the approaches set out in the position statements are not statutory but may be included in, or referenced by, statutory guidance and legislation.

Environment Agency staff use these position statements as a framework to make decisions on activities that could impact on groundwater. This clear approach aims to remove uncertainty and potentially inconsistent decision-making.

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## **Research and analysis: ACRE advice: application for a trial of GM Adenovirus 4 (16/R49/01)**

This document is the Advisory Committee on Releases to the Environment (ACRE's) advice to government in considering a [request from Imperial College London \(16/R49/01\)](#). The application is for a deliberate release of genetically modified virus (the vaccine) based on Adenovirus 4.

ACRE is satisfied that the trial will not have an adverse effect on human health or the environment.

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## **News story: Focus on driving excellence in the nuclear sector**

NSAN was established by nuclear employers and Government to address the skills challenges facing the nuclear sector. It provides a forum in which organisations can come together to discuss these challenges and develop solutions to address them. It currently has around 145 member organisations drawn from both the public and private sectors.



Ann McCall, Waste Management Director at RWM said: “Having worked closely with NSAN in recent months we are thrilled to be confirmed as a member. We are committed to maintaining and driving up skills within our organisation and we look forward to playing an active role within the Skills Academy.”

NSAN works with employers in the nuclear sector to develop a range of solutions which can help train staff and support them in developing their skills. One example is the Nuclear Training Network, an online portal where staff can access a range of training courses.

RWM has recently produced a new e-learning training course which is now available via the NSAN portal. Aimed primarily at those involved in decommissioning and waste management, the course provides an overview of RWM, its role as the public sector delivery body for a geological disposal facility (GDF) and the support it provides to radioactive waste packagers. More than 150 people have already signed up for the course from across the nuclear industry.

Further information on the course can be found [here](#)

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## **Guidance: Higher Tier manual for 1 January 2017 agreements: Countryside Stewardship**

*Updated:* Passed 10 July deadline for late revenue claims and amendments.

Use the manual and addendum to understand the rules and conditions that apply to Countryside Stewardship (CS) agreements.

Use the options, supplements and capital items documents:

- to understand the rules for each option, supplement and capital item
- for advice on carrying out options, supplements and capital items

Mid Tier options, supplements and capital items which can be included as part of a Higher Tier application.

Use the terms and conditions document to understand the rules of the scheme.

Use the conversion guidance document to know how to convert land in year nine (of a ten year) Higher Level Stewardship to Higher Tier.

Use the record keeping document to understand what evidence you need to keep to show you're meeting scheme requirements.

Use the [Countryside Stewardship forms](#) to support your agreement.

The manual has been designed with portrait and landscape pages. To make sure these print correctly, select 'auto rotate' in your printer settings before you print.

## Overlap of CS options with Ecological Focus Areas (EFAs)

In 2018, you can overlap the following CS options with EFAs declared on your Basic Payment Scheme (BPS) 2018 application:

- [AB1 Nectar flower mix](#)
- [AB3 Beetle banks](#)
- [AB4 Skylark plots](#)
- [AB5 Nesting plots for lapwing and stone curlew](#)
- [AB6 Enhanced overwinter stubble](#)
- [AB8 Flower rich margins and plots](#)
- [AB9 Winter bird food](#)
- [AB11 Cultivated areas for arable plants](#)
- [AB15 Two year sown legume fallow](#)
- [AB16 Autumn sown bumblebird mix](#)
- [HS2 Take historic and archaeological features out of cultivation](#)
- [OP2 Organic wild bird seed mixture](#)
- [SW1 4 to 6 metre buffer strip on cultivated land](#)
- [SW3 In-field grass strips](#)
- [SW4 12 to 24 metre watercourse buffer strips on cultivated land](#)
- [SW6 Winter cover crops](#)
- [SW12 Making space for water](#)
- [WD3 Woodland edges on arable land](#)
- [WT2 Buffering in-field ponds and ditches on arable land](#)

Your CS options that share land with BPS claims (known as 'double funding') will receive a reduced payment rate. You can find the rate in the page for each listed option, under 'How much will be paid', and in the manual (section 3.3.1).

From 1 January 2019, you will not be able to overlap the 19 CS 'double funding' options with EFAs declared for BPS. You can place the options and EFAs in the same land parcel but they cannot overlap.

You can include hedges in both CS options and EFAs without payment deductions.

## Revenue claims

The deadline for Natural England to receive late revenue claims and amendments was 10 July 2018. Natural England will not accept any further revenue claims in 2018.

## Contact

Contact Natural England for help with your agreement.

## Enquiries

Natural England  
County Hall, Spetchley Road

Worcester

WR5 2NP

Email

[enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

Telephone

0300 060 3900

Opening times: 8:30am to 5pm, Monday to Friday (excluding public holidays)

Find out about call charges at [www.gov.uk/call-charges](http://www.gov.uk/call-charges).