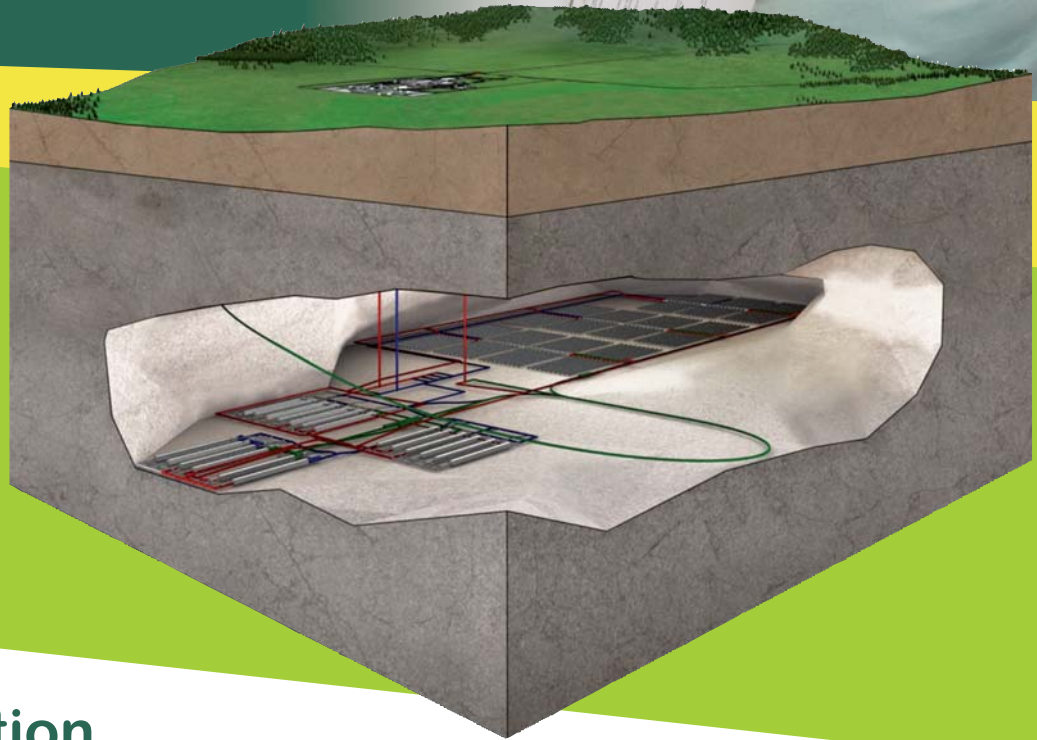


Geological disposal of radioactive waste in West Cumbria?

Should West Cumbria take part in the search for somewhere to put a repository – known as a geological disposal facility – for higher activity radioactive waste?



Public consultation

The West Cumbria Managing Radioactive Waste Safely Partnership, which involves a wide range of local organisations, was set up to help Allerdale Borough Council, Copeland Borough Council and Cumbria County Council decide whether or not to take part in the search for a site for a repository, without any commitment to have it.

After examining the issues and talking to local people we have produced a consultation document setting out our initial opinions on a range of issues. This is to get your views before we send our final report to the Councils.

This is now the time to get involved and decide what you think would be best for the area.

Have your say

Although there would still be a right to withdraw from this process during the search for a possible site, the decision that needs to be made now is an important one.

The consultation period will run until 23rd March 2012.

This Overview leaflet provides some background information and an overview of our initial opinions. You will find much more detail in the full consultation document.

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Why geological disposal?

An independent committee of experts, the Committee on Radioactive Waste Management (CoRWM) recommended that geological disposal was the best available long-term approach compared to other ways of managing higher activity radioactive waste.

Higher activity waste is currently stored above ground, the majority of it at Sellafield. This waste decays over time but some of it remains hazardous for many thousands of years.

The Committee on Radioactive Waste Management said geological disposal would be safer in the longer term than storage above ground e.g. because of the risk of terrorism. They also said that we cannot rely on societies hundreds or thousands of years from now to manage these wastes safely above ground.

The Committee on Radioactive Waste Management's recommendations received wide-ranging support.



Entrance to a repository being built in Finland (Posiva)

Geological disposal is also the preferred approach in most other countries with nuclear waste.

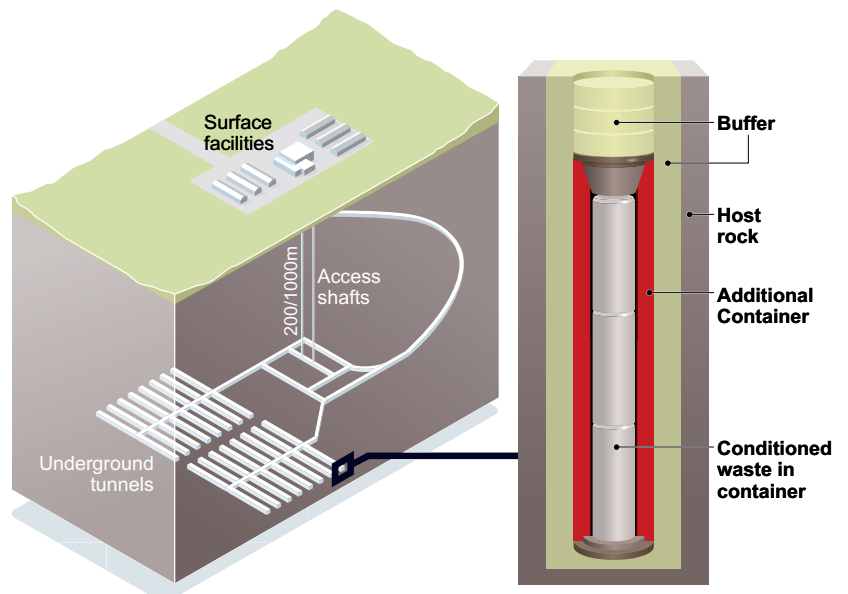
However, some people and organisations are not convinced about the long-term safety of geological disposal and oppose having an underground repository. These organisations include Greenpeace, Friends of the Earth and Radiation Free Lakeland.

What is geological disposal?

The Government says geological disposal involves placing the waste deep underground in a purpose built facility, called a geological disposal facility or a repository, leaving the waste there forever once it is closed.

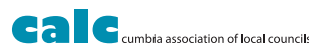
It is based on the idea that radiation can be contained for extremely long periods by a combination of engineered underground structures and the surrounding rocks. This is called a multi-barrier approach.

While the waste is in the facility, the level of radioactivity will reduce over time.



Multi-barrier approach for higher level waste

Organisations in the West Cumbria Managing Radioactive Waste Safely Partnership



Others who have been invited to be members (but have declined):
Greenpeace, Friends of the Earth West Cumbria and Cumbrians Opposed to a Radioactive Environment (CORE)

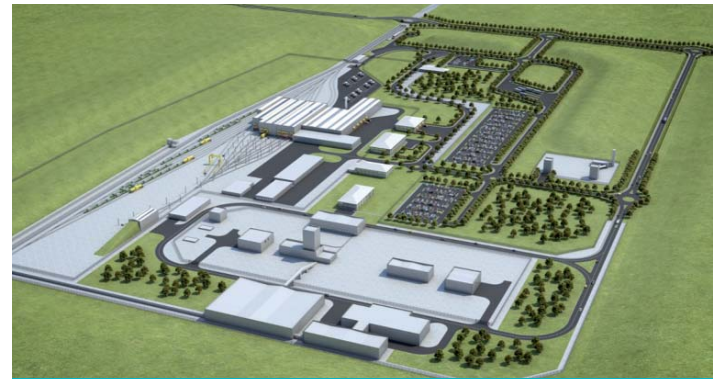
What might a repository look like?

A repository would be located between 200 and 1000 metres underground.

The underground facilities could be somewhere between **6 km²** and **25 km²** (2.5 and 9.5 square miles) in size, depending on the type of rock, and how much and what kind of waste would be placed into the repository.

This would be between approximately one and four times the size of the Sellafield site. The amount of rock that would need to be excavated to create the facility is similar to what was removed during the building of the Channel Tunnel.

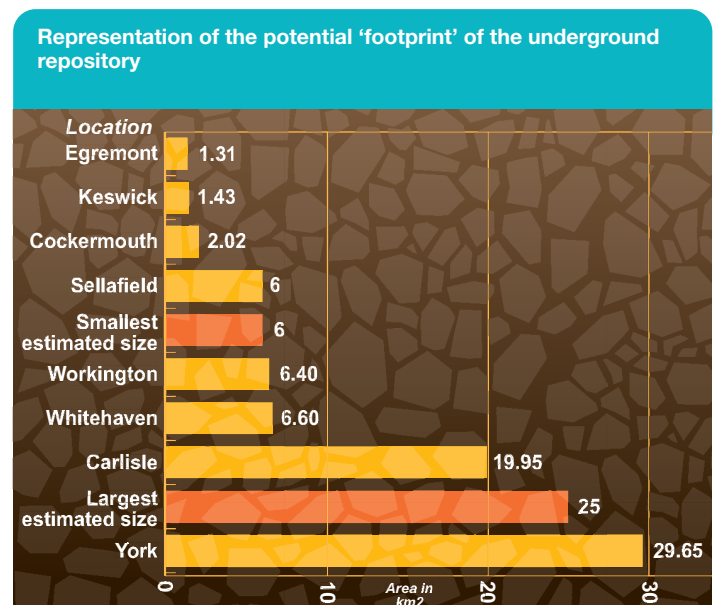
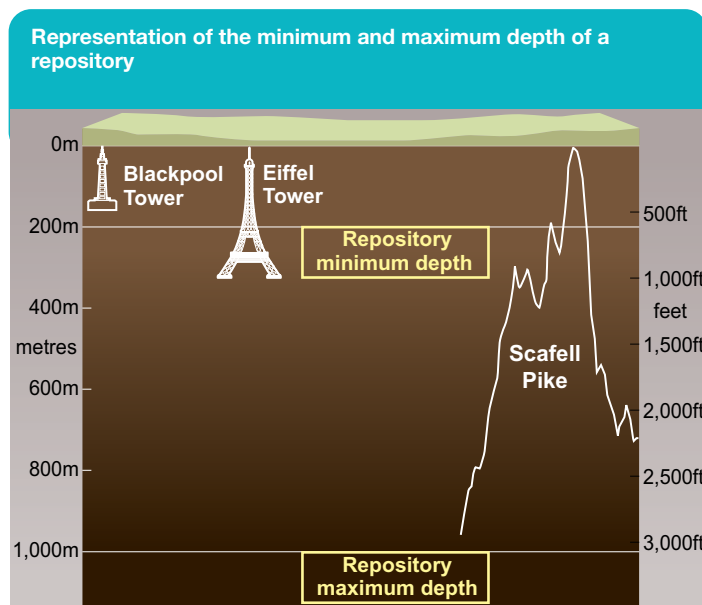
There would also be surface facilities with buildings such as administration offices, workshops and possibly a waste



NDA image showing what the facilities might look like above ground

packaging facility. It is estimated these facilities would be about **1 km²**.

The underground facilities would be accessed through sloping tunnels and vertical shafts. The Nuclear Decommissioning Authority, which is responsible for implementing geological disposal, says surface facilities could either be above the underground facilities or up to 10km away, possibly further.



These diagrams are for indicative purposes only. The diagram on the right is based on information at www.itravel.co.uk/maps.

Uncertainties

In the next few pages you will find an overview of the key issues and our initial opinions. As we are not yet at the stage of identifying potential sites, there are a number of questions we cannot know the answers to.

For example, there is not enough information to know if there is anywhere in West Cumbria with suitable geology (p5) and we do not yet have detailed designs for a

repository because they would depend on the geology of a site (p4).

If West Cumbria does enter the siting process more information would become available. The key questions we need to consider now are **‘Do we know enough?’** and **‘Is what we know acceptable to us at this stage to justify taking part in the search for a site?’**

Safety, security, environment and planning

Ensuring a repository would be safe, secure and environmentally sound is the most important issue for all of us.

The Nuclear Decommissioning Authority (NDA) is responsible for developing the plans for a repository and demonstrating that it would be safe.



The regulators – the Environment Agency and the Office for Nuclear Regulation – would also be responsible for ensuring that the design and operation of any facility meets their standards for environmental protection, safety, security, waste management and radioactive waste transportation.

The Nuclear Decommissioning Authority has produced general proposals that look at how a repository could be constructed and operated safely. However, they could only do specific work on designing a repository at a later stage, once a site is found.

Some people have concerns about whether a geological disposal facility could be safe. For example, an organisation called Nuclear Waste Advisory Associates (NWAA) has

produced a register of issues they believe would need to be addressed in developing plans for a repository. See www.nuclearwasteadvisory.co.uk for more details.

We have listened to evidence from the Nuclear Decommissioning Authority, the regulators and others. We have also commissioned independent views of the Nuclear Decommissioning Authority's current research on the design and safety of a repository.

On the basis of the information available now we believe the Nuclear Decommissioning Authority and the regulators have suitable capability and processes in place to protect local residents, the workforce and the environment.

However, further monitoring and independent review would be needed as plans are developed.

We also looked at planning processes. For example, we have said these may rule out certain scenarios, such as siting surface facilities within the National Park.



Opponents of geological disposal in Kendal in 2010 (image Westmorland Gazette)

Design & engineering

We accept that the detailed designs would depend on location and be tailored to the geography and specific geological structure at the site in question.

Our initial opinion is that the Nuclear Decommissioning Authority's generic designs for a repository are appropriate and flexible enough at this stage in the process.

Retrievability

We believe it is important not to rule out the option to retrieve waste from the facility at a later date.

This is not a simple issue. There would be advantages and disadvantages to sealing off a repository completely or keeping the waste accessible.

The Government has said they are content that the issue of 'retrievability' is left open at this stage. This issue would be resolved much later in the process taking account of the views of local communities.



Research tunnel in Finland (Posiva)

Geology

Geology would be one of the most important issues in identifying a suitable site.

Last year the British Geological Survey (BGS), the UK's geological experts, carried out a basic geological study of West Cumbria and up to 5km offshore.

Parts of West Cumbria were screened out as obviously geologically unsuitable for an underground repository (see right). This is mainly because these areas have resources people may want to access in future. However, the surface facilities could still be in these areas.

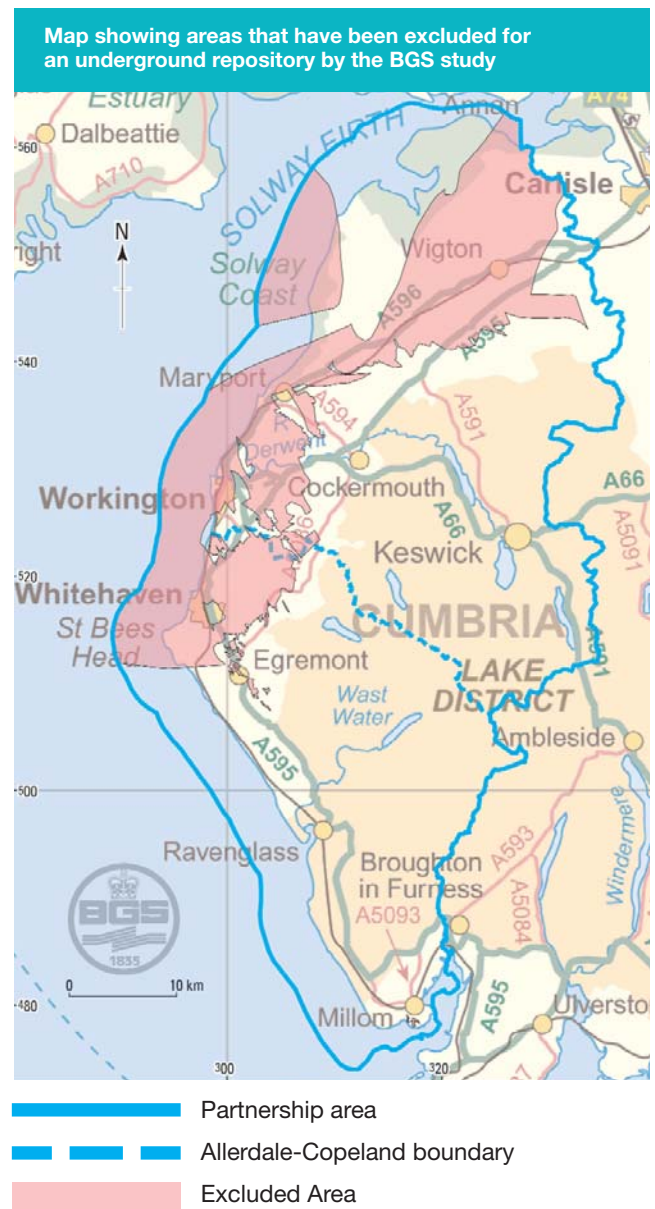
Is all of West Cumbria unsuitable?

Some people argue that there is already enough evidence to show that the whole of West Cumbria is geologically unsuitable. See www.davidsmythe.org for more details.

After looking at a range of views and evidence our opinion is that the argument that all of West Cumbria should be excluded as unsuitable at this stage is not generally accepted within the professional geological community.

In the absence of clear, detailed evidence showing that all of West Cumbria should be ruled out, our initial opinion is that there is enough possibly suitable land to make further investigations worthwhile.

We believe it will only be possible to find out if there is a suitable site for a repository if there are more detailed investigations, including boreholes, to test the rocks in the area.



Geological mapping BGS © NERC. OS topography © Crown Copyright. All rights reserved. 100017897/2010

Inventory

The types and amounts of radioactive wastes that would go into a repository – the inventory – could affect things like the design, size and the amount of time it operates for.

Based on the most recent estimates of the amount of waste that could be placed into a repository we estimate that the underground facilities could be between 6 and 11 times the size of the Royal Albert Hall in terms of volume. However, it is not possible to be certain how much waste would actually be put into a repository this far in advance.

We have made satisfactory progress towards agreeing a set of principles with the Government that define an acceptable process for how the inventory could be changed, including how the community can influence this.

The issue of whether waste from new nuclear power stations would go into a repository is of concern to some people. We agree this is an important issue but feel that this is a decision to be made if or when new nuclear power stations are constructed in the UK.



NDA image of a vault in a repository for intermediate level waste

Impacts of a repository

If a repository is built in West Cumbria it could lead to a number of different negative and positive impacts.

These might include:

- the effects of construction such as spoil, noise and dust
- whether there would be any impact on health
- changes in investment in the area and employment
- the amount of traffic to and from a site
- whether the special qualities of the Lake District National Park would be affected
- whether there would be impacts on the tourism and food production industries
- possible impacts on the visual or physical environment

The Nuclear Decommissioning Authority (NDA) says that if the process continues, all of the issues would be addressed while there is still a right to withdraw.

We are satisfied at this stage that an acceptable process can be put in place to assess any negative

impacts and either sufficiently reduce their effect or compensate for them.



Cyclists in rural Cumbria

However, we would only have a clear picture of what the impacts would be if a site is identified and more detailed plans are produced.

We have also considered whether a repository could be in the longer term

economic interests of the area.

For example the NDA say there would be an average of 550 people a year employed building and operating a repository over a 140 year period.

If this process continues it would be necessary to look at how it might be possible to ensure people in the area could benefit from these opportunities, and also, whether there might be any negative impact on jobs in other areas such as tourism.



Students taking part in a discussion on a repository last year

A community benefits package

If a repository was built there would also be a package of additional community benefits, in recognition of the essential service being provided to the nation.

Our work included commissioning research on UK and international experience of community benefits. This showed communities have received benefits such as extra investment to generate jobs, new facilities for local people and infrastructure improvements.

We have agreed a set of principles with the Government as the basis for any future negotiations. For example, the principles say community benefits would have to be additional to the investment necessary to build a repository and to investment the community would normally expect.

They also say the scale of any benefits would need to have the potential to transform the economic and social well-being of the area.

However, we cannot be certain what the Government might agree to this far in advance and, therefore, whether the amount and type of these benefits would match the expectations of local people.



Students at an event organised by the Partnership last year

The process for siting a repository

If there is a decision to take part in the search for somewhere to put a repository, there would be a series of steps to narrow down from possibly suitable areas to specific sites.

This would include desk-based assessments of criteria such as: geology; the impact on the environment and the landscape; and transport.

These assessments would help decide where to focus more detailed geological investigations including boreholes.

The Nuclear Decommissioning Authority say that the search for a suitable site (Stages 4 and 5) would take about 15 years.

A new partnership of local organisations and community representatives would oversee the Nuclear Decommissioning Authority's technical work and make sure local people are fully involved in the process. The Government says a repository will only be put in an area where people are willing to have it.

At certain points the partnership would need to use a method, such as an opinion poll, to find out what the public thinks.

The Councils that have decided to take part in the search for a site would make the formal decisions about things like which areas to put forward for assessments and investigations, and ultimately which sites, if any, should be put forward for a repository, based on advice from the new partnership.



Listening to your views

The Government says a repository will only be put somewhere where the geology is suitable and there is a community that has volunteered to have it.

We will look at whether a range of people in Cumbria think our initial opinions are reasonable, and amend our final report before sending it to the three Councils. As this decision would particularly affect people in Allerdale and Copeland there will be a large, representative opinion poll to see whether people in these areas are in favour of or against entering the siting process, without a commitment to have the facility.



Exhibition stand at the Whitehaven Festival in 2011

If there is a decision to take part in the search for somewhere to put a repository, the Councils would have the right to withdraw from the process up until the point where any construction starts. The Councils would need to show that there is credible support for a decision to accept a repository.

What do you think?

We are organising a number of events across Cumbria where you can come and talk to Partnership members and technical experts, as well as pick up a copy of the consultation document and a DVD.

Community Events:

Wednesday 18 January – Millom – Network Centre

Thursday 19 January – Whitehaven – Civic Hall

Friday 20 January – Gosforth – Village Hall

Monday 23 January – Kendal – Town Hall

Tuesday 24 January – Workington – Carnegie Arts Centre

Wednesday 25 January – Keswick – St Herbert's Centre

Wednesday 1 February – Penrith – Methodist Church

Thursday 2 February – Carlisle – The Courts (County Offices)

Tuesday 7 February – Barrow – Dock Museum

Wednesday 8 February – Wigton – Market Hall

Thursday 9 February – Egremont – Market Hall

Friday 10 February – Cockermouth – Kirkgate Centre

All events will run from 1pm – 7pm, with discussion sessions at 2pm, 4pm and 6pm.

To obtain a copy of the consultation document:

1. Call our Freephone number **0800 048 8912**
2. Email contact@westcumbriamrws.org.uk
3. Write to us at:

Freepost RSKT-LTXU-HAYC
West Cumbria MRWS Partnership
Copeland Borough Council
The Copeland Centre
Catherine Street
Whitehaven CA28 7SJ

You can download the consultation document and watch the DVD by visiting our website www.westcumbriamrws.org.uk or by reading the QR code on the right.



To see a list of useful websites, including a selection of organisations with alternative views about geological disposal and the MRWS process, visit the 'Useful links' section on our website or read the QR code on the right.



To read a QR code you need a smartphone and a QR reader.

The consultation period will run until 23rd March 2012.

Comments slip Geological disposal of radioactive waste in West Cumbria?

What are your views on whether the areas covered by Allerdale and/or Copeland Borough Councils should take part in the search for somewhere to put a repository, without any commitment to have it?

The full consultation document provides much more detail on the issues involved. We would encourage you to fill in the response form that comes with this. However, if you prefer, you can give us your brief thoughts by completing this comments slip and sending it to the Freepost address above.

Name: Postcode:

We need your details in order to process your response. Your personal details will not be published. See the full consultation document for more information.