

# HYDROXYAPATITE BARRIERS FOR RADIONUCLIDE CONTAINMENT

US Patent #6,592,294 & #6,416,252

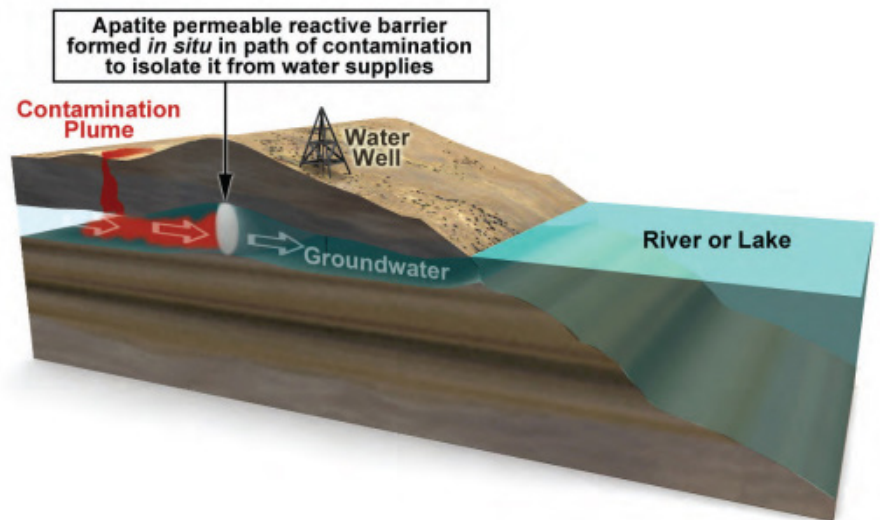
Technology Readiness Level: 5

Key components have been tested in relevant environments

## Technology Description

Apatite, which has been shown to effectively bind and immobilize radionuclides, can also be used to form barriers in water and soil in contaminated environments. The apatite barrier is formed *in situ* in soil by injection of chelated calcium, phosphate and fluoride solution. *In situ* formed apatite can be used to sequester actinides, strontium, lead, heavy metals and other compounds that react with apatite.

This technology has been effectively applied at the Hanford site to create a barrier between the contamination areas, ground water, and nearby water sources such as the Columbia River. Due to the rising and falling of the water levels of the river, containment and an effective barrier is imperative to protecting from the spread of contamination. This technology has been shown to reduce the risks associated with sites containing hazardous materials and can be a critical component in maintaining a safe environment, protecting natural resources, and further mitigating associated risks.



## Technological Benefits

- Contains and “holds” compounds that react with apatite which are hazardous to the environment
- Most effective method in the cleanup at Hanford site
- Creates a barrier in soil and groundwater

## Potential Applications

- Ground and surface water protection of contaminated sites
- Radioactive waste clean up
- Containment of radionuclides

## Contact Us

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