

Focus on:

Boeing Auburn Site Enhanced Bioremediation



A worker injects bioremediation fluid during the pilot study in 2015.

More information

Please visit the project webpage for more information:

ecology.wa.gov/BoeingAuburn.

Contact information

Janelle Anderson

425-301-6454

janelle.anderson@ecy.wa.gov

Special accommodations

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6700 or visit

<https://ecology.wa.gov/accessibility>.

People with impaired hearing may call Washington Relay Service at 711.

People with speech disability may call TTY at 877-833-6341.

How does enhanced bioremediation work?

Bioremediation is a natural process where bacteria in the soil “eat” chemical contaminants like trichloroethylene (TCE). This process is enhanced by adding non-toxic food (sugars and carbon) into the groundwater so bacteria can grow faster and eat more contaminants.

Boeing used this action at their Auburn site in 2004 and 2005 to treat a highly contaminated area. Boeing also completed a pilot study to test this technology in areas of lower-level contamination in 2015. The results showed that enhanced bioremediation reduced contamination faster.

Why use the bioremediation cleanup method?

We recommended that Boeing evaluate the use of enhanced bioremediation to treat three areas of contamination in Algona and Auburn with higher concentrations of TCE or TCE’s breakdown product, vinyl chloride (see Figure 1 on the next page):

- Outlet Collection Mall Area
- Northern Algona Residential Area
- Perimeter Road Area

Boeing proposed using enhanced bioremediation in the northern Algona residential area only.

After the results of the draft supplemental feasibility study were reviewed, Ecology and Boeing agreed that only the northern Algona residential area should be treated with enhanced bioremediation.

Read a summary of the study results on our website at ecology.wa.gov/BoeingAuburn.

Bioremediation photos



Bacteria food awaits injection into the Boeing Auburn site.



A hydrologist shows a long hose that delivers bacteria food to contaminated groundwater.

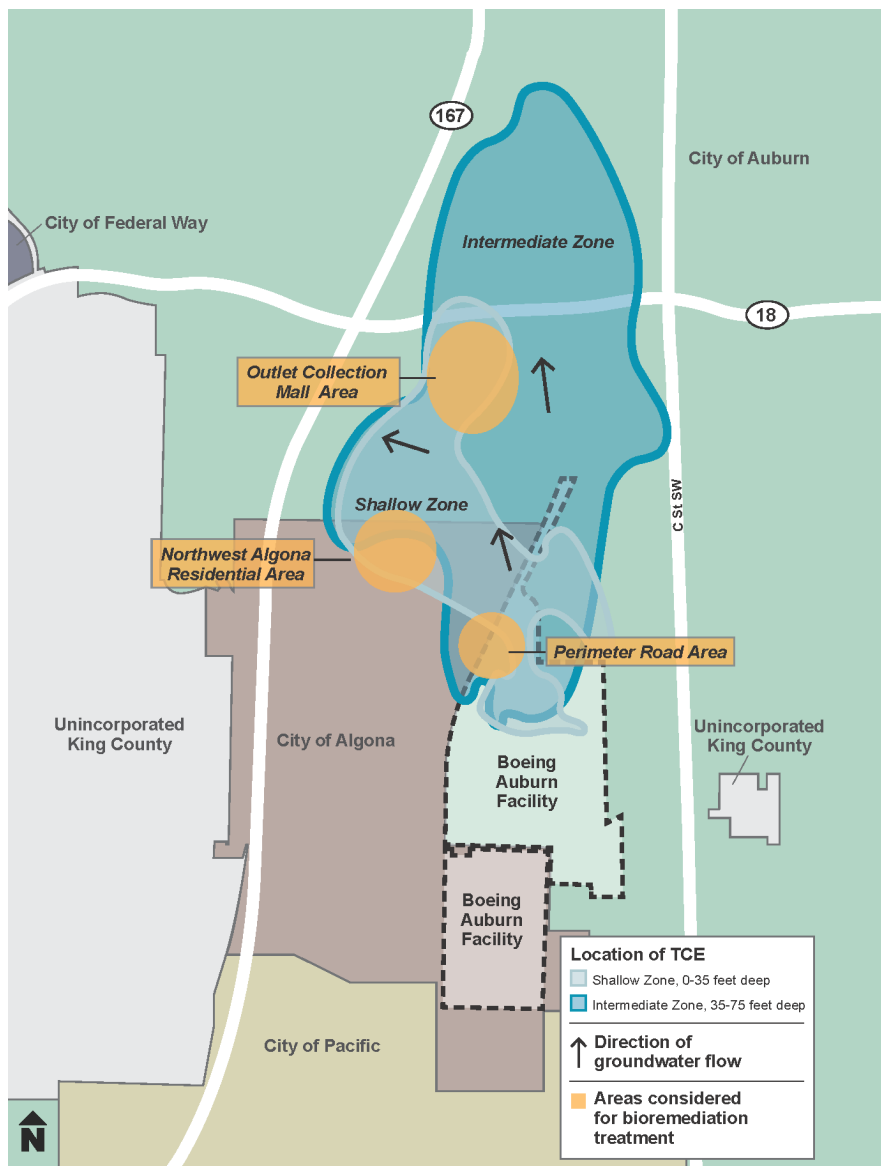


Figure 1: Areas studied for enhanced bioremediation.

Groundwater cleanup levels

Washington has two clean water standards: one for groundwater (based on drinking water standards) and one for surface water. For TCE, the surface water cleanup standard is about ten times stricter than the groundwater standard.

At this site, Ecology is using the surface water standard as the groundwater cleanup level because contaminated groundwater enters into surface water. Boeing wanted to use the drinking water standard as the groundwater cleanup level. Visit our website at ecology.wa.gov/BoeingAuburn to see statements from Boeing and Ecology on this issue.

How long will the bioremediation process take?

A computer model of the site’s contaminated groundwater predicts that using enhanced bioremediation and monitored natural attenuation (MNA) will reduce cleanup time. For example, using enhanced bioremediation in the Algona area should reduce the time needed to reach surface water quality standards by more than half.