

Table A-14.B. Evaluation factors for bioventing/biosparging

Remedial time frame	Concern	Low to moderate
	Discussion	Medium to very long—typically 3–10 years. Depends on soil type and LNAPL type. Low-permeability soils and heavier LNAPL require more time to remediate.
Safety	Concern	Low
	Discussion	Pressurized piping systems, vapor generation and migration dangers possible if done too aggressively near receptors.
Waste management	Concern	Low
	Discussion	No waste is generated
Community concerns	Concern	Moderate
	Discussion	At times community concern has been raised relative to increased VI risk with air injection. Actually increased risk is rare and can be managed, however communicating this to the community has at some sites proven challenging. Noise of treatment equipment may be an issue.
Carbon footprint/ energy requirement	Concern	Low to moderate
	Discussion	Carbon footprint depends on the energy required for treatment (e.g., energy used to power air compressors).
Site restrictions	Concern	Low to moderate
	Discussion	Bioventing/biosparging wells can usually be spaced and located around site restrictions or accessed through the use of directional drilling equipment.
LNAPL body size	Concern	Moderate
	Discussion	The size and depth of the LNAPL body directly affect the cost and extent of the remediation system, although there is an economy of scale with the need for one blower and compressor to operate on multiple wells and sparge points. This concern is the same as it would be for any active LNAPL remediation technology.
Other regulations	Concern	Low
	Discussion	No air emission permitting is needed for air injection. Extracted air discharge normally requires permitting or regulatory approval.
Cost	Concern	Low to moderate
	Discussion	In general, bioventing/biosparging is more cost-effective than other active LNAPL technologies and has been proven at many sites for over 20 years.
Other	Concern	
	Discussion	