



# INJECTION vs. LAND APPLICATION DISPOSAL

Milestone Industrial™ is your single source for efficient and responsible waste management. Our solutions include deep well injection – a clean and safe approach that is proven and preferred for its environmental benefits. **Here’s how our solution stacks up against land application disposal.**

	Deep Well Injection Disposal	Land Application Disposal
Overall Assessment	Class I underground injection has been identified by the EPA as an effective disposal method with a lower potential for environmental release when compared to other disposal options. <sup>1</sup>	While land application of wastewater can be a cost-effective method for certain waste streams, it presents an increased potential for soil, surface water, or groundwater contamination.
Environmental Impacts	Waste is contained deep underground below impermeable rock layers that prevent contamination of drinking water, soil, and surface water, minimizing ecosystem risks.	Chemical-laden waste can degrade soil and contaminate groundwater. Pre-application treatment like composting or stabilization may be required to reduce toxicity.
Human Health Impacts	Studies by the University of Miami and the EPA (2000, 2001) suggest that, due to the secure isolation of wastewater, injection wells have the least potential for impact on human health when compared to ocean and surface discharges. <sup>2</sup>	Land application can expose humans to contaminated water, airborne pollutants, pathogens, or heavy metals, potentially causing respiratory issues, gastrointestinal diseases, or long-term toxic effects.
Containment Reliability	Injected into a thoroughly assessed, impermeable geological formation far below drinking water aquifers, the waste is permanently isolated, ensuring long-term containment while minimizing future risk and liability.	Application rates must not exceed the soil’s capacity to biologically assimilate the waste. Proper rates can be determined with lab and field studies.
Regulations	The EPA’s Underground Injection Control program is regulated under the Safe Drinking Water Act. Operators must obtain permits, conduct geologic studies, monitor continuously, and comply with strict reporting requirements to prevent contamination of underground water sources.	States often set specific requirements based on federal guidelines. Most local regulations require permits, nutrient management plans, and soil and water monitoring to prevent runoff and contamination of soil, surface water, or groundwater.
Monitoring and Reporting	Subject to rigorous EPA oversight, deep well injection requires continuous monitoring, mechanical integrity testing, and detailed reporting to ensure permanent containment. The process offers full traceability and long-term compliance assurance.	Regular monitoring of soil and groundwater quality is required to detect potential contamination and oversaturation.

<sup>1</sup> SOURCE: [Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances](#)

<sup>2</sup> SOURCE: [Wastewater Deep Injection Wells for Wastewater Disposal – Industries Tap a Unique Resource](#)