Molecular approach to evaluate biostimulation of 1,2-dibromoethane in contaminated groundwater

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highlights

This study investigated the potential for biostimulation of 1,2-dibromoethane in contaminated groundwater using a molecular approach.

Microcosm experiments diligently mimicked in situ conditions.

The addition of jet fuel (50 mg/l) yielded the highest biodegradation of EDB.

Jet fuel addition led to highest bacterial numbers compared with other amendments.

Members of genera associated with monooxygenase dominated all microcosms.

Gene abundances for monooxygenase were significantly higher in jet fuel treatments.

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1. Introduction

The compound 1,2-dibromoethane, also known as ethylene dibromide (EDB), was primarily used as a lead scavenger in anti-knock gasoline mixtures, particularly in aviation fuels