

# Soil Microcosm Study of Aerobic Biodegradation of Gasoline Constituents in a Transportation Right of Way

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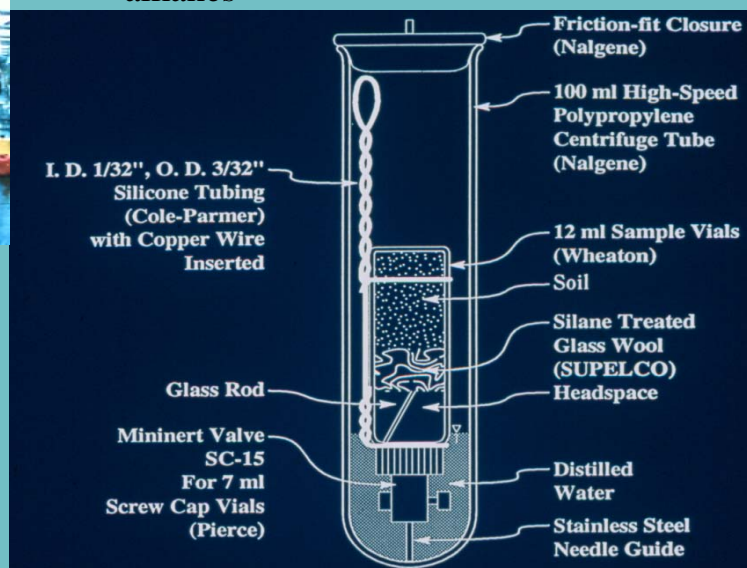
**Synopsis:** We prepared aerobic soil microcosms from aseptically obtained soil from the unsaturated zone above a weathered gasoline spill site along an Interstate highway in eastern Massachusetts. Hydrocarbon vapors were then fed into oxygenated head space, and subsequent headspace concentrations were obtained through Mininert valve and analyzed by gas chromatography. Biomass was also estimated by heterotrophic plate counts. Substrate and biomass data calibrated Monod degradation kinetics for 5 aromatics and 5 alkanes



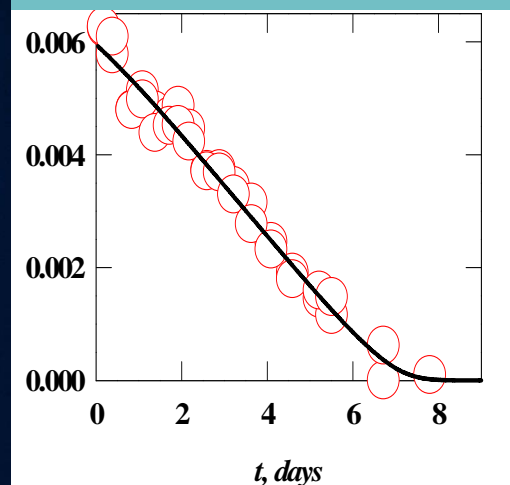
Steam cleaned core barrels advanced thru steam cleaned, hollow stem augers



Core barrels extruded in nitrogen filled glove box, into 20 mL soil microcosm vials using sterilized, disposal syringe barrels



Soil microcosms prepared in laminar flume hood in EWRE laboratory



2 methylhexane biodegradation

Ostendorf, DW, Schoenberg, TH, Hinlein, ES, and Long, SC (2007), "Monod kinetics for aerobic biodegradation of petroleum hydrocarbons in unsaturated soil microcosms," Environmental Science and Technology, 41: 2343-2349.