

A SYSTEMATIC APPROACH TO *IN SITU* BIOREMEDIATION OF CARBON TETRACHLORIDE

¹Bart Faris and ²ITRC-*In Situ* Bioremediation Team

¹*New Mexico Environmental Department, Ground Water Quality Bureau, 4131 Montgomery Northeast, Albuquerque, NM 87109; Phone: (505)841-9466; Fax: (505)884-9254.*

²*Interstate Technology Regulatory Council, In Situ Bioremediation Team, ECOS/ITRC, 444 North Capitol Street, NW, Suite 445, Washington, DC 20001; Phone: (202)624-3660; Fax: (202)624-3666.*

Abstract

Historical use of carbon tetrachloride (CT) as a fumigant at grain silos has caused groundwater contamination at numerous sites. The Interstate Technology Regulatory Council (ITRC)—*In Situ* Bioremediation (ISB) Team has recently completed a guidance document that describes a systematic approach to ISB for CT. Contaminant reduction of CT through ISB typically occurs through a reductive process whereby an electronic donor is introduced into the subsurface. Primary reductive pathways for CT has been documented to occur primarily through direct reductive dechlorination, cometabolic reductive dechlorination, and cometabolic denitrification. CT is found at silos, perhaps in conjunction with nitrate contamination that serves as an electron acceptor during ISB of CT. ITRC's ISB team guidance document describes regulatory concerns, provides a description of treatability tests and feasibility, and defines the contaminant's pervasiveness, risks, sources, and site parameter criteria important to the evaluation of ISB for CT.

ITRC is a state-led coalition of more than 35 states working together with industry and stakeholders to achieve regulatory acceptance of environmental technologies. ITRC brings together a diverse mix of environmental experts and stakeholders, from both the public and private sectors, to broaden and deepen technical knowledge and streamline the regulation of new environmental technologies.

Key words: *in situ* bioremediation, dechlorination, cometabolic, electron donor, denitrification