



## Geological Survey Water-Supply Paper (1520)

By -

RareBooksClub. Paperback. Book Condition: New. This item is printed on demand. Paperback. 222 pages. Original publisher: Ada, OK: U. S. Environmental Protection Agency, National Risk Management Research Laboratory, 1999. Subject: In situ remediation. Excerpt: . . . TCE Reductive-Dechlorination The other principal contaminant at the USCG site is TCE. The reductive-dechlorination of chlorinated aliphatics, such as 0 0 TCE, by Fe is thermodynamically favored ( Vogel et al. , 1987 ). The reductive-dechlorination of TCE by Fe to non-toxic hydrocarbon end products occurs by both reductive - elimination and sequential hydrogenolysis ( Roberts et al. , 1996; Arnold and Roberts, 1997 ). The sequential hydrogenolysis pathway results in the production of toxic chlorinated intermediates, such as cis-dichloroethylene ( cDCE ) and vinyl chloride ( VC ) ( Figure 4 ). However, less than 10-20 of the TCE mass degrades via this pathway producing cDCE and VC byproducts ( Orth and Gillham, 1996 ), and these byproducts 0 are themselves reductively-dechlorinated by Fe. The major end products of reductive-chlorination of TCE are ethene and ethane. Ethene, ethane and lower concentrations of methane, propene, propane, 1-butene and butane end products have been observed in previous laboratory experiments with granular iron ( Orth and...



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