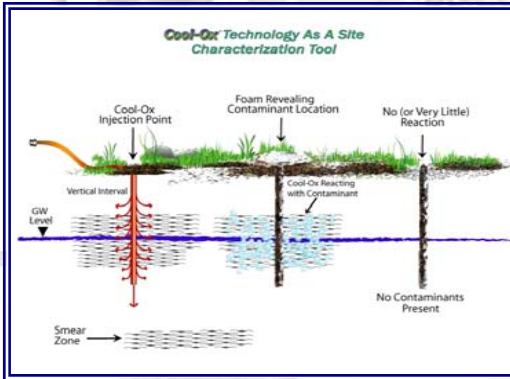


Contaminants successfully  
treated by  
**Cool-Ox™**

BTEX  
Coal Tars  
Vinyl Chloride (DCE)  
Chlorobenzenes  
Polyaromatic Hydrocarbons  
Creosote  
Jet Fuel  
Chlorinated Herbicides  
Chlorinated Pesticides  
Pentachlorophenol (PCP)  
Chlorinated Solvents  
PCBs  
Dioxins  
Pesticides  
Home Heating Oil  
Excavation Odor Control

**Sites**

Service Stations  
Railroads  
Pipelines  
Agchem Formulators  
Manufactured Gas Plants  
Wood Treating  
Military Bases  
Dry Cleaners  
Marine Bulk Terminals  
Under Building Structures  
Sediments  
Mixed Plumes  
Refineries  
Steel Mills  
Chemical Plants



**Site Characterization Technique**

*"professional personnel  
teamed with  
cutting edge technology  
and  
superior equipment"*

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**DeepEarth  
Technologies, Inc.**  
*"the chem-ox professionals"*

**Cool-Ox™**

**"Controlled In-Situ  
Chemical Oxidation"**



[www.deepearthtech.com](http://www.deepearthtech.com)

*Cool-Ox™ is a trademark of DeepEarth  
Technologies, Inc.*

## Controlled In-Situ Chemical Oxidation

What is the Cool-Ox™ process?

# Cool-Ox™

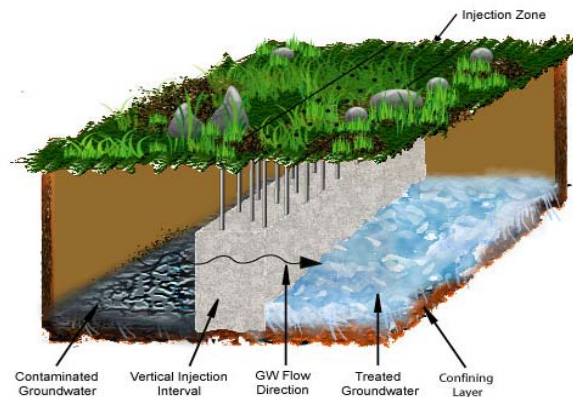
Although hydrogen peroxide is widely accepted as the cleanest in-situ chemical oxidation compound, its application using the Fenton mechanism is dangerous and uncontrollable. The extremes in heat and pressure generated by the Fenton reaction can volatilize contaminants causing them to spread even further in soil and groundwater. Moreover, concentrated liquid hydrogen peroxide (>10%) has been responsible for numerous accidents.



DeepEarth Technologies, Inc., (DTI) has tamed the Fenton reaction by developing the patented Cool-Ox™ Technology. By controlling the reaction, contaminant sources can be pin pointed quickly during the site injection work. DTI can then focus on the sources thus assuring maximum effect of the Cool-Ox™ reagent. The photo above illustrates this forensic feature unique to Cool-Ox™ Technology. The Cool-Ox™ process is designed to address a broad variety of remedial challenges found at sites throughout the world.

Cool-Ox is a registered trademark of DeepEarth Technologies, Inc.

## The Cool-Ox™ Bio-Sponge™ Reactor (Groundwater Defined Flow Application)



Wherever Cool-Ox™ Technology has been applied, rapid growth of intrinsic aerobic microbes has been observed. This unique feature provides the one-two punch of combining abiotic chemical oxidation with bio-remediation. By engineering the accumulation of the microbial cells, they will produce extra-cellular polymeric substances (ECPS) that gives the appearance of live marine sponges. This matrix allows the groundwater to flow through providing a filtration mechanism entrapping contaminants and providing a carbon source for the microbes. This is the basis of the Cool-Ox™ Bio-Sponge™ Reactor.

**"eliminates safety hazards for workers and sites"**

Cool-Ox™ was specifically designed to exploit the advantages of hydrogen peroxide while eliminating the safety hazards associated with the product. The heat and acid hazards of the Fenton reaction have been eliminated. The optimum pH for the Cool-Ox™ reaction is 8, thereby facilitating its use in limestone strata. Cool-Ox™ aggressively destroys a wide variety of contaminants. It is particularly well suited for treating chlorophenolic and creosote compounds where the basic pH aids in desorbing these contaminants from the soil. Eliminating acid problems, heat and the need for injection wells makes Cool-Ox™ the safest ISCO process available. **No Heat means No Ignition Source!**

**"experience, quality equipment and injection technique are keys to successful site remediation"**

DTI prides itself in the quality of its equipment and personnel. For fire safety, all DTI rigs and vehicles are equipped with diesel engines and maintained continuously. All personnel hold required OSHA training certificates.



The "Deep Shot Rig" Feeding Two Probes



**"Free Product Treatment"**

The Cool-Ox™ Process has been successfully employed to eliminate free product at several sites both in-situ and in excavations. The photo above depicts Cool-Ox™ reagents reacting with free product at a large hydrocarbon release. An additional feature of this application is the ability of the reagent to convert aromatics to non-odorous compounds thereby, eliminating rather than masking the problem.