The VTX Process

"Liquid Incineration for a Cleaner Environment"

This **VTX** Process is a very efficient treatment procedure for recalcitrant organic compounds. The process is based upon the finding that a certain catalyst and peroxide or similar reactant can be employed to degrade soil and/or water borne contaminants at normal pH levels. With this technique, wastewater, groundwater, or soil containing organic contaminants having at least one oxidizable aliphatic or aromatic functional group can be completely oxidized on contact. A broad list of treatable chemicals would include selected pesticides, petroleum hydrocarbons, and chlorinated solvents. Included in the list of readily treatable chemicals are such notable contaminants such as MtBE, TCE, BTEX, and PCE.

The catalyst is safe, (i.e. does not add to the contamination of the soil or water to be decontaminated). The catalyst uses a common metal as its chief catalysis point within the **VTX** complex to generate a significant quantity of free radicals in a manner similar to Fenton's reaction. However, the **VTX** complex allows the reaction to proceed at neutral pH (Fenton's requires a pH of 2 to 3). The non-metallic portion of the **VTX** complex is consumed in the process leaving only CO2, metal ions (some insolublized), chloride ions and water as final products with complete oxidation.

The **VTX** Process can be employed in a variety of ways and is easily adaptable to existing treatment systems. The contact time for the oxidation process to occur is short, usually under 3 hours. While the system works best in *ex situ* applications, it is often adapted to *in situ* treatment.

The **VTX** Process can replace existing oxidative wastewater treatment systems of any size. Importantly, **VTX** based treatment systems are often more efficient and provide for lower cost than competing oxidation treatment systems. Significantly, a **VTX** system requires no materials of special construction and power requirements are absolutely

minimal. The design is simple. Metered injection of the ingredients, rapid in-line mixing, and adequate retention time are the primary design criteria.

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