

Treatment Technology for soil contaminated with Wood Preserving Chemicals

Wood preserving plants use copper-chrome arsenate (CCA), creosote and pentachlorophenol (PCP) to impregnate telephone poles, fence posts, railway sleepers and wood of all types to preserve them against degradation when in use. Over time, these chemicals can enter the environment, contaminating the surrounding land.

Entech

developed the use of the Dolocrete® technology to immobilise the specific contaminants; arsenic, chrome, polyaromatic hydrocarbons (PAH) and PCP. The treatment involves the mixing of Dolocrete® with a high shear mixer in conformance with the regulator's mixing policy

The Problem

Entech

was contacted by a client in Western Australia who had received 1800 tonnes of soil contaminated with the above wood preserving chemicals which was classified as Class V waste and therefore could not be placed directly into landfill. Our Solution

Dolocrete® is a magnesium oxide-based binder prepared to a patented process from very high magnesium carbonate content dolomite or magnetite material. Depending on the waste material, a selection of proprietary catalysts can be used to facilitate the formation of chemical bonds in a mineral matrix. Dolocrete® additives and special binders work synergistically to form "a double layer" barrier, trapping the waste and repelling moisture.

Entech developed the use of the Dolocrete® technology to immobilise the specific contaminants so that the treated soil material was safe for disposal. The treatment involves the mixing of Dolocrete® with the contaminated soil using a mixing mechanism approved by the Western Australia Department of Environment. The Outcome

The

treatment of wood preserving chemical impacted soil material using the Dolocrete® technology provided a safe, reliable and economic treatment solution.

The leachability of the contaminants of concern in the treated soil material was reduced by at least an order of magnitude (in some cases by two) compared with the untreated soil. This resulted in the treated soil being disposed of as Class IV waste.