

# Eclipse saves soils from oils

Every year thousands of tonnes of hydrocarbon contaminated soils in Western Australia need to be removed from a diverse range of sites and treated in an environmentally responsible manner.

Traditionally this has meant the contaminated soil is dug up and then dumped again in a landfill where it has the potential to pollute the surrounding area.

But in more recent years, Western Australia's leading soils manufacturer, the award-winning Eclipse Soils, has pioneered bio-remediation techniques for petroleum contaminated soils that have become standard for the industry.

At Eclipse Soils' Kwinana resource recovery centre, contaminated soils are received from a huge range of sources including hydrocarbon and dieldrin impacted soils from Western Power sites throughout WA; oil impacted soils from Muja and Kwinana Power Stations and Public Transport Authority yards, as well as from Leighton Beach tanker yards; the former railway workshop land at Midland and from service station sites of the major oil companies.

Eclipse works with first responders in the case of oil tanker roll-overs where up to 120,000 litres of oil can contaminate 3000 tonnes of soil.

Scientists at Eclipse divide the soils up into stockpiles, called biopiles within an impermeable High Density Polyethylene lined cell.



Biopiles under construction at Eclipse Soils resource recovery centre

The soil in the biopiles is blended with a combination of compost, nutrients (nitrogen and phosphorus), and microbial inoculants to aid in the bioremediation process.

Biopiles are regularly turned and watered to maintain optimal oxygen and moisture levels.

Hydrocarbon-degrading microorganisms with specialised metabolic pathways efficiently break down complex hydrocarbons into carbon, oxygen and water, leaving a useful soil.

Close monitoring and testing tells the scientists when the soil is completely remediated and suitable for use in one of or more of Eclipse Soils award winning products.

“Bioremediation not only removes hydrocarbon contaminants but also enhances soil health by promoting microbial diversity and activity, as well as adding carbon to the soil,” said Eclipse general manager Sean Bennett.

“It’s a win-win situation. Not only is the contamination removed from the environment and not sent to landfill but the remediated soil becomes more fertile and better capable of supporting plant growth and other ecological functions.”

Mr Bennett said that bioremediation was the most sustainable approach for dealing with hydrocarbon contamination because it addressed the root causes of the contamination, rather than relocating contaminated soils to a landfill.

“It promotes natural processes that eventually lead to the complete breakdown of hydrocarbons into beneficial products. The process does not involve the use of harmful chemicals or the generation of additional waste,” he said.

Eclipse Soils is licenced to receive and undertake this process on soils with a classification as high as Class IV (according to the DWER Waste Classifications) and its management is following the Department of Environment (2004) Bioremediation of hydrocarbon-contaminated soils in Western Australia.

For more information on Eclipse Soils bioremediation go to the website at: [www.eclipsesoils.com.au/technicalpapers/](http://www.eclipsesoils.com.au/technicalpapers/)