

## 6. Koppers Stockpile Project: 6000T Treatment (2006) - PAH

### Newcastle Steelworks closure area, Newcastle (NSW)

#### Project scope

Following the successful 150 tonne treatment trial of soil taken from the estimated 6000 tonne contaminated soil stockpile at Koppers Carbon Materials and Chemicals (KCMC) facility in Mayfield, Newcastle NSW, remediation of the remaining stockpile was commissioned. The remediation project involved the transportation of stockpiled soil to the Innova Plant at the former Newcastle steelworks closure area, treatment of the contaminated soil at the **INNOVA** Plant, post-treatment validation and transport of the treated soil back to the Koppers Facility. The purpose of the project was to remediate the contaminated soil to allow its reuse as clean fill within the Koppers Facility. Approvals were granted by the NSW Government to undertake the project based on results obtained during laboratory studies and treatment trials.

The purpose of the remediation project was to remediate the heavily PAH impacted soil to levels allowing beneficial reuse of the soil as fill material within the grounds of the Koppers facility. Additionally the stockpiled contaminated soil could be removed from Koppers EPA site register.



Koppers soil stockpile



Loading stockpile for transport to Innova facility



Feed stockpile in containment area

Treatment operations were undertaken over a four week period during January and February 2006 with a 6000 tonne stockpile being treated by the **INNOVA** facility. Plant operations were conducted on a 24 hours a day, Monday to Friday basis with preventative maintenance being carried out on each Saturday morning. Comprehensive soil sampling and analysis was undertaken both in-house (analysis provided by ALS Laboratories sitelab onsite analyser) and independent QA / QC programs (analysis provided by Robert Carr & Associates). Stack emissions sampling and analysis was provided by HLA Envirosiences.

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### Results summary

The **INNOVA DFTD** process successfully processed and treated the Kopper's stockpile despite very high hydrocarbon levels in the feed soil. The unusually high hydrocarbon content of the feed soil prompted **INNOVA** to modify the process in order to successfully treat the contamination. This modification involved water injection as well as running at a milder soil throughput. The treated soil analysis results showed that there was a massive reduction in soil contaminant levels for all hydrocarbon species. In all cases, the soil contaminant levels were reduced to non-detectable or near non-detectable levels. The NSW auditor agreed product soil clean-up levels for TPH and PAH of 1000 and 100 ppm respectively were easily met and the soil beneficially reused as fill on the Koppers industrial site.

Stack emissions analysis revealed very low particulate, pollution and contaminant levels, indicating very high removal efficiency for the process. Stack emissions were within the EPA regulatory limits and in many cases, significantly below acceptable limits.

Soil Results Summary	FEED SOIL RANGE (mg/kg)	TREATED SOIL RANGE (mg/kg)
<b>BTEX</b>	nd – 1.25	nd – 0.28
<b>TPH</b>	6,410 – 28,944	nd (<1000ppm)
<b>PAH</b>	2,454 – 13,361	nd – 27.4 (<100 ppm)
<b>BaP</b>	178 - 811	nd – 5
<b>CYANIDE</b>	34 – 56.3	nd

