

New remediation guidelines for petroleum contamination

February 9 2015, by Adam Barclay

New industry advice that will place Australia at the global cutting edge in the clean-up of petroleum-based contaminants in groundwater was today released by the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE).

The report provides state-of-the-art technical advice to industry and government on the best ways to assess, remediate and manage petroleum contamination in soil and groundwater. Of all [contaminated sites](#) in Australia, over two-thirds feature [petroleum hydrocarbons](#).

The report specifically addresses the difficult issue of petroleum light non-aqueous phase liquids (LNAPLs). Less dense than water, these substances float on top of water and can migrate long distances, contaminating drinking water supplies and agricultural water, and emitting toxic vapours into homes and workplaces.

The first of its kind in Australia, the report fills a major gap in Australia's approach to managing a serious and widespread issue.

The new guide is part of a series aimed at industry managers, environmental consultants, remediators, the owners and operators of contaminated sites, and Australian state and federal regulators seeking lasting solutions for petroleum-contaminated sites.

The Managing Director of CRC CARE, Professor Ravi Naidu, says the guide is the result of a worldwide search for the latest and best in clean-

up science and technology by the CRC's scientists as well as research carried out under uniquely Australian conditions.

"Subsurface contamination by petroleum hydrocarbons is one of the most common forms of pollution in modern society. It is caused by fuel, oil and gas leaks and spills and commonly occurs around industrial sites where these products have long been used or stored.

"Once this oily residue escapes into groundwater, it critical for human health and environmental safety that it is cleaned up effectively, using the best possible techniques."

Prof Naidu said that Australia, with its large number of jurisdictions and varying environmental rules lacked a single common approach to the issue – and the new report was intended to provide this:

"It is envisaged that this guide will form a platform for a consistent, trans-jurisdictional approach to the management of LNAPL impacts across Australia, and is a focal document for a series of CRC CARE technical reports which address the management of LNAPL and subsurface petroleum hydrocarbons."

The report emphasises that each hydrocarbon pollution scenario is unique, due to variations in the source pollutants, soil and groundwater conditions. Solving the problem requires the methodical application of a systematic approach which involves:

- engaging with regulators and other stakeholders at an early stage to identify and agree upon remediation goals and end points
- prioritising sites, particularly where an emergency response to a pollution incident and associated statutory reporting is concerned
- defining site sensitivity
- fully understanding the problem
- setting clear remediation goals and end points

- selecting the best available, affordable clean-up technology
- pilot testing the chosen technology
- designing, installing, and commissioning the system safely
- monitoring remediation performance
- developing a sound plan to close out the clean-up, acceptable to all involved.

Development of the guide was overseen by a technical working group and a project advisory group comprising environment and health regulators, industry representatives, environmental practitioners, and researchers.

More information: The report LNAPL remediation guidance: a practitioners' guide for the analysis, management and remediation of LNAPL, CRC CARE Technical report No. 34, November 2014, is available at www.crccare.com/publications/technical-reports

Provided by CRC CARE

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