

MEDIA RELEASE

Tuesday 17 September

Oil-degrading microorganisms clean up Yankunytjatjara Country following diesel spill

A truck accident on the Stuart Highway in 2023 spilled approximately 30,000 litres of diesel across 400 m² of land in remote South Australia. In addition to localised impact to the environment, the spill also impacted a creek of cultural significance to the Yankunytjatjara people.

Rather than leave the contaminated soil to slowly degrade over time (which could pose ongoing risks to the surrounding environment) or use costly and emission-heavy 'dig and dump' approaches, scientists used diesel-degrading microorganisms and absorbent materials to restore the contaminated land.

'Certain microorganisms can consume and degrade hydrocarbons as part of their biological processes. The microorganisms are supplemented with nutrients, then mixed through the impacted soil,' said Ms Natalie Newman, Environmental Scientist at EHS Support, who was involved in the remediation project. 'From a cultural sensitivity perspective, this process is also a lot less intrusive because it means that you're leaving the soil on the land.'

Traditional Owner representatives played an active role in the decision-making process throughout the remediation efforts, being present during onsite excavations and providing suggestions about how to reduce the cultural impact of the work.

'In addition to understanding the needs of the Yankunytjatjara people, we had to consider what would be most effective in terms of time, the remediation cost, the sustainability and safety of the preferred option,' said Ms Newman. 'We liaised with the South Australian EPA, the client, and the Traditional Owners, working together to find the best option for everyone. Various options were discussed with the Traditional Owners and their preference was for a remediation approach that did not involve the removal of soil from the land.'

Traditional Owners helped guide excavation efforts to ensure the roots of young mulga trees were not harmed and that the treatments were applied in a way that reduced the risk of contamination being spread to native species following rainfall.

'When we found out about the cultural significance of the creek bed, we got in touch with the Yankunytjatjara Aboriginal Corporation, who put us in contact with a registered Traditional Owner,' said Ms Newman. 'We liaised with them as we worked through the assessment options so they could see what we were thinking and planning.'

'On site, we walked around with the Traditional Owners, and they showed us where we could excavate and what areas needed to be protected,' said Ms Newman.

Over three months, the remediation efforts helped to reduce contaminant levels by over 50%, saving up to \$1 million, preventing up to 460,000 kg of CO₂ emissions, and eliminating safety risks involved in trucking over 2,000 tonnes of soil over one thousand kilometres.

'It's an ongoing project, but we're nearly at low enough levels to be confident that it won't have ongoing impacts to the surrounding environment,' said Ms Newman.

Reflecting on the project, Ms Newman shared the importance of engaging with Traditional Owners early in the decision making process and the huge potential for bioremediation technologies in future.

'I think microbial bioremediation technology has the potential to be used more often in the industry as an effective and sustainable option for managing contaminated land,' said Ms Newman.

Ms Newman will present this work at the CleanUp 2024 conference in Adelaide, hosted by crcCARE from 18 to 16 September. crcCARE is a partnership of organisations dedicated to developing new ways of dealing with and preventing contamination of soil, water and air.

The conference program is available at: <https://adelaide2024cleanupconference.com/program>

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Presentation: Natalie Newman, 15.30 Tuesday 17 September, City Room 2 (Adelaide Convention Centre)

Media: Accredited media representatives are welcome to attend. Complimentary media passes are available for any media personnel who wish to attend the conference in person.