

CASE STUDY 03 · VALIDATION

Rapid Validation of an Excavation Pit

Transformer oil contamination in South Australia, excavated and validated in real time – so the pit could be backfilled the same day.

An ageing ground-mounted power transformer located in South Australia was scheduled to be removed from service and replaced. After the above-ground infrastructure was removed, transformer oil contamination was evident in the soil surrounding the footings.

Enviropacific Services was engaged to manage the excavation of the contaminated soil and to validate the pit as 'decontaminated' before it was backfilled with clean soil.

The hand-held RemScan instrument was used to measure Total Petroleum Hydrocarbon (TPH) levels in the soil during the site remediation and excavation process in real time.

The levels of TPH in the worst affected areas were up to 100,000 mg/kg. The Enviropacific Services Project Manager directed the extent of excavation until contamination levels in the walls and floor of the pit were below the target criteria of 1,000 mg/kg TPH as measured by RemScan.

The pit was then backfilled, and soil samples collected from each of the pit walls and floor were sent to a NATA-accredited laboratory for independent validation. A week later, the laboratory results confirmed the accuracy of the RemScan measurements – all samples returned TPH values well below the target criteria.



Excavation of the transformer footings, with RemScan measurements directing the extent of the dig.

R^2 0.983

RemScan versus NATA-accredited laboratory

Correlation across pit wall and floor samples, TPH C₁₀-C₃₆ (mg/kg).

IN THE CLIENT'S WORDS

"I used RemScan because I wanted to reduce the uncertainty of trying to estimate contamination by visual staining and smell alone. Using RemScan will allow us to confidently backfill these types of excavations on the day without the risk of having to revisit the site to chase residual contamination when lab results come in – site remobilisation can cost thousands of dollars even for small sites."

Sam Tymons · Project Manager, Enviropacific Services

OUTCOME

Use of RemScan ensured that over-excavation and extra disposal fees were avoided, and gave the project team the confidence to backfill the pit on the same day without having to return to site.