

CASE STUDY 07 · SAND WASHING

Remediation of a Coastal Wilderness Area

70,000 m³ of contaminated sand, a protected Victorian foreshore, and an Environmental Auditor who accepted RemScan as the project's primary analytical tool.

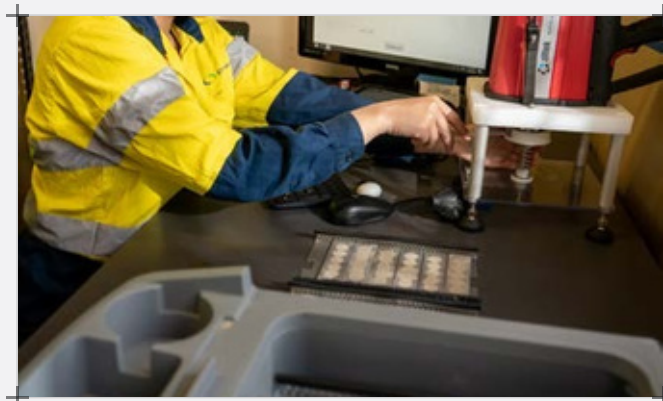
In 2018 Cardno was contracted by a major oil company as Principal Contractor for removal of subsurface hydrocarbon contamination from a protected foreshore area in regional Victoria, Australia. Cardno is a global provider of integrated professional services.

Remediation of the site was achieved by establishing an on-site sand washing plant and processing over 70,000 m³ of contaminated sand over a 12-month period. Cardno managed all technical, commercial, compliance and safety aspects for the project.

During the investigation phase, RemScan was identified as a key technical enabler for the project. An initial study was conducted by Cardno and GXLab to verify the calibration of RemScan against NATA laboratory results. On the basis of this study, the independent Environmental Auditor accepted the use of RemScan as the primary analytical tool for analysis of hydrocarbons in soil during the remediation, with QA/QC samples analysed at a NATA-accredited laboratory to ensure ongoing reliability of the results.

REMSCAN WAS USED TO

- Classify the excavated sand, to determine whether it needed treatment, and to segregate pre-treated stockpiles based on the level of impact.
- Validate the walls and floor of the excavation, and determine whether there were areas of impact that needed "chasing out".
- Monitor the sand washing process, providing real-time feedback for control and optimisation.
- Validate the treated sand, to classify it as suitable for backfill or requiring further treatment.



RemScan being used in the portable lab. Photo courtesy of Cardno.



The protected foreshore site under remediation. Photo courtesy of Cardno.

CALIBRATION OVER THE PROJECT LIFE

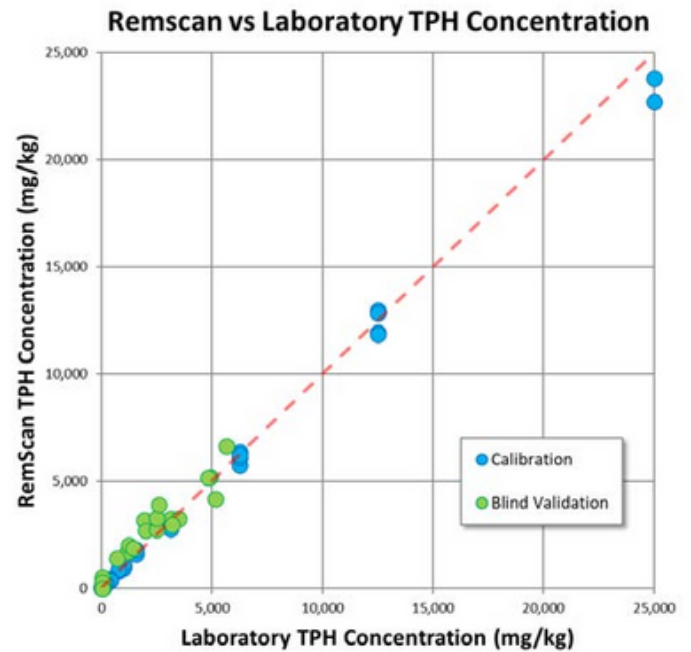
GXLab worked with Cardno to establish an initial calibration for the site and to monitor and maintain the accuracy of the calibration over the lifetime of the project. The calibration was easily updated several times during the project using the validation data, to account for minor changes in the geology across the site.

OUTCOME

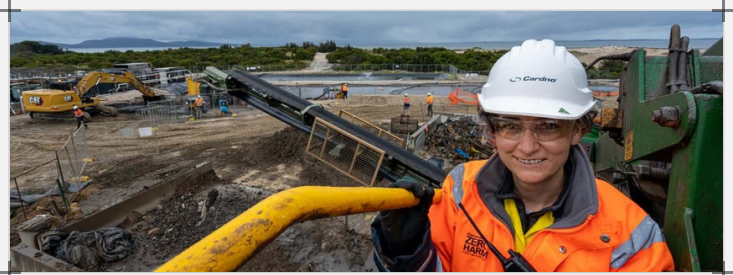
The key benefit to the project was fast turnaround analytical results, which enabled the remediation works to continue unhindered. Where initial sampling identified that further data was required, RemScan allowed the collection and analysis of additional samples at marginal extra cost or time. Over 4,000 samples were processed via RemScan during this remediation project, resulting in considerable cost savings compared to using an analytical laboratory.

4,000+

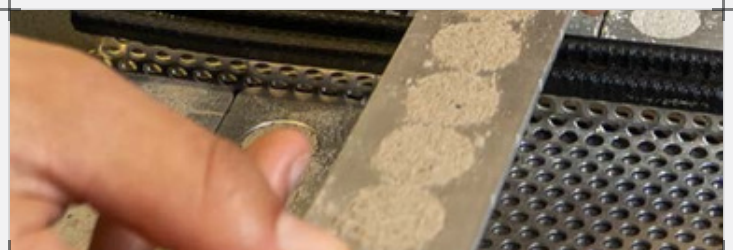
Samples processed via RemScan



RemScan calibration plot with real field sample validation.



The project's soil washing plant. Photo courtesy of Cardno.



Sand samples being dried using RemScan's Portable Drying Unit.

IN THE CLIENT'S WORDS

"The level of customer service provided by Ziltek during this project was outstanding. Ziltek provided excellent support and worked patiently with Cardno through the various issues that inevitably arose over the lifetime of the project."

Danny McDonald · Principal Environmental Geoscientist, Cardno