CASE STUDY

Reducing Mine Site Costs

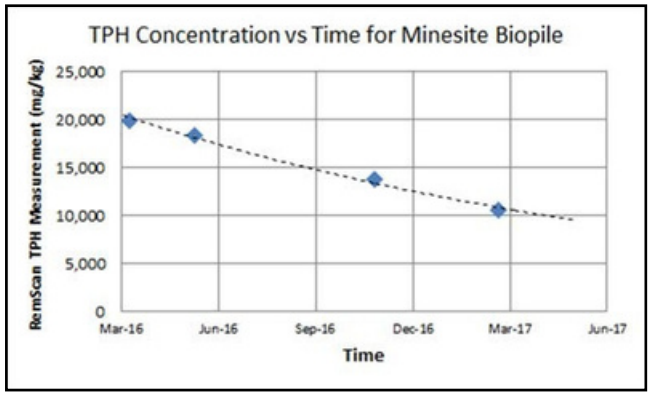
Fortescue Metals Group (Fortescue) is one of the world's largest iron ore producers located in the Pilbara region of Western Australia. The miner produces more than 150 million tonnes per annum and uses huge drilling and earthmoving machinery which is subject to hydrocarbon spills from hydraulics, fuel and lubricants.

Fortescue utilises RemScan® for the rapid and accurate measurement of TPH (C_{10} to C_{40}) in soil. This is preferred to off-site laboratory analysis which, in this remote and harsh environment, is logistically challenging, time-consuming and relatively costly.

Fortescue uses RemScan in all aspects of their hydrocarbon management process including:

- Identifying and delineating spills. In addition to from normal operations, RemScan can be used to audit contractor laydown areas prior to demobilisation, thus reducing site liabilities.
- While excavating spills, ensure that all contaminated soil is removed while avoiding the transfer of excess clean soil to the biofarm.
- Monitoring of the remediation process in the biofarm to optimisation the process and throughput. Nutrients and water are added and the soil is aerated to stimulate natural microorganisms to degrade the hydrocarbons. The Fortescue team uses RemScan to monitor the concentration of the hydrocarbons over time (refer graph) to ascertain the endpoint when laboratory analysis is use to validate the results so that soil can be reused in the operations.

RemScan Being Used *In-Situ*



TPH Degradation

Fortescue has evaluated the benefits of using RemScan and they generally fall into 3 areas:

- Assists in efforts to minimise, mitigating and remediate the impacts of its operations;
- Collects more frequent data which increases confidence in the remediation outcomes; and
- Reduces the need for costly laboratory analysis.

These benefits have resulted in a payback period of less than 12 months.

P +61 (0)8 7081 5523 E info@ziltek.com W ziltek.com

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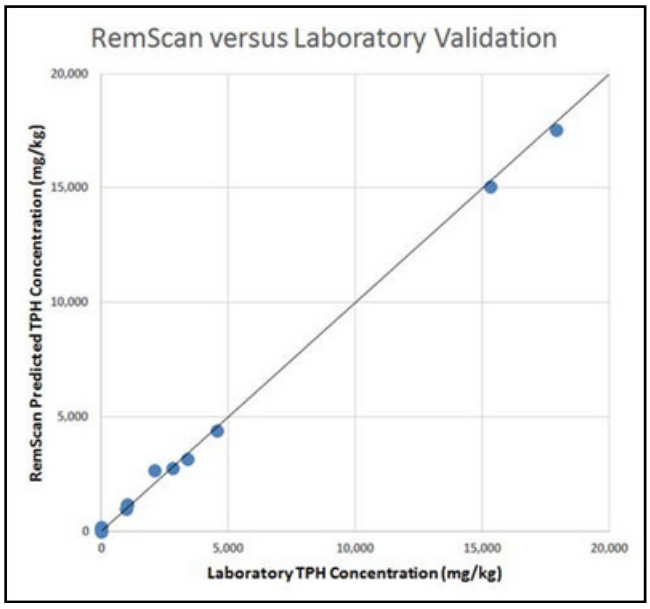
The accuracy of RemScan versus laboratory is shown in the graph below and the closeness of the points to the Y=X line demonstrates the high accuracy of RemScan.



RemScan Versus Laboratory Analysis

RemScan Being Used *In-Situ*

Fortescue Biofarm