

# LIFE ASSESSMENT OF LARGE CAST IRON WATERMANS

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## EXECUTIVE SUMMARY

Issues affecting the condition assessment of large cast iron watermains are discussed in detail and the need for soil evaluation as a cost effective condition assessment option is explained. The limitations of using traditional soil parameters as a quantitative condition assessment method are outlined, and the potential of the Linear Polarisation (LPR) technique are discussed.

The project is focussed on comparing the predictions of corrosivity obtained from various LPR techniques against actual pitting measurements made on exhumed pipe samples with a known history and condition.

One technique (referred to as the 'manual CIE method') proved to be both reproducible and statistically significant in establishing a quantitative relationship between soil test and corrosion rate of buried iron pipe. The automated techniques were disappointing in their results and possible reasons for these poor correlations are discussed.

However, it is clearly established that the basic LPR technique is capable of better asset life predictions than the chemical test regimes it replaces, and the methodology should be developed. Although the Remote Field Tool (RFT) technology has proven excellent for detailed investigations of relatively small diameter critical pipelines, there are economic and size limitations on widespread use. The development of an in-situ probe based on LPR methodology would be a worthwhile goal for the industry.