Soil corrosivity –
What the standards say and what can be actually measured

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MetriCorr has deployed several thousand corrosion rate sensors for more than 150 pipeline operators. The sensors correlate corrosion rates with pipe-to-soil DC potential (ON/OFF/IR compensated), Pipe-to-soil AC potential, DC current densities, AC current densities, spread resistance etc. The majority of sensors are connected to the pipelines' CP systems, but a great deal has been left to corrode freely – without cathodic protection.

Louisville Gas and Electric (LG&E) have conducted soil sampling at sensor position (pipe depth) at more than 150 positions where soil type, texture, grain size distribution, chemical analysis, pH, soil resistivity, buffer capacity, microbial SRB activity etc. has been analyzed This has provided an opportunity to correlate corrosion rates actually measured with aforementioned parameters, thus discussing the applicability of various standards predicting soil corrosivity versus real corrosion rate measurements. The field observations are discussed and supported by simple laboratory observations.