**Technical Case Study - Pipeline Integrity Issue**

You are askedto evaluate a corrosion-related issue identified in a section of an oil transmission pipeline. The pipeline segment in question is 24 inches in diameter and runs through a coastal region, making it vulnerable to external corrosion due to saline exposure and high humidity levels.

* The pipeline was commissioned 18 years ago and is constructed from carbon steel (API 5L X52).
* Recent in-line inspection (ILI) data using magnetic flux leakage (MFL) technology has revealed a cluster of localized corrosion defects with wall loss ranging from 25% to 55% over a 4-meter section.
* Operating pressure: 70 bar
* Design pressure: 90 bar
* The affected section is buried but located near a coastal wetland.
* No prior mitigation (coating repair or CP enhancement) was done in the last 5 years.

**Task Requirements:**

* Simulate a fitness-for-service (FFS) assessment based on the provided defect data using any simplified assumptions.
* Propose a risk-based maintenance approach: should the pipeline be repaired immediately, inspected at intervals, or replaced?
* Suggest technical methods for repair (e.g., composite wrap, sleeve, or section replacement).
* Outline basic safety and HSE considerations during assessment and maintenance planning.
* Write your findings in the form of a formal technical report using the previously provided gig instructions.

**Note:** You are expected to use engineering reasoning, make reasonable assumptions, and create clear tables, diagrams, or illustrations as needed. Referencing common codes like API 579 or ASME B31.4 (as background knowledge) is encouraged if known.