# Quarterly Report - Public

**Date of Report:** *11th Quarterly Report – June 30, 2025*

**Contract Number:** *693JK32210010POTA*

**Prepared for:** *DOT PHMSA*

**Project Title:** ***Risk-Based Decision Support for Rehabilitation of Natural Gas Distribution Pipelines***

**Prepared by:** *GTI Energy*

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**For quarterly period ending:** *June 30, 2025*

## 1: Work Performed During this Quarterly Period

Task 6 – Risk Mitigation Decision Support: Work in this task established a decision-making tool based on the consequences of the corrosion risk. The consequences of the damage identify the leak-rupture boundary (LRB) where the likelihood of rupture would occur. LRB is defined as the operating pressure threshold at which the defect causes a release of gas without pipe rupture.

The LRB probability distribution was incorporated in a web-based program for the user to identify the constraints where existing pipe and operating conditions would result in a high likelihood of pipe rupture.

Several assumptions are commonly used to establish the relationships and causalities of the parameters. The distributions and relationships were produced from the Maxey-Folias LRB relationships and from historical distributions of the pipe and flaw parameters. The decision regarding the response to LRB probability as shown in Figure 1.

Figure 2 shows the data input page for the calculation of LRB. The user inputs soil and pipe characteristics for the estimate. Default distributions are assumed for unknown parameters, which increases the time to run the calculations. An output of a program run presents the likelihood of the rupture based on input parameters.

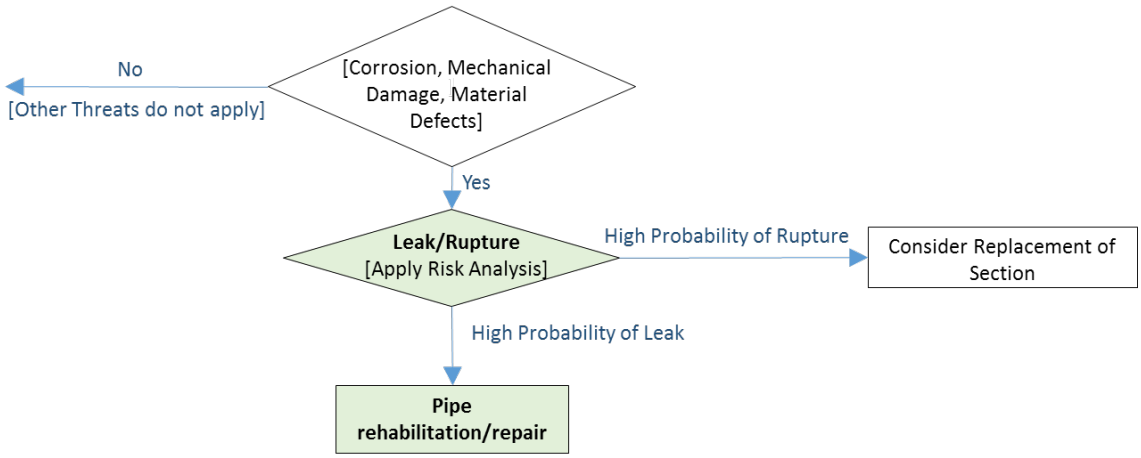


*Figure 1 - Threat interaction flow chart*

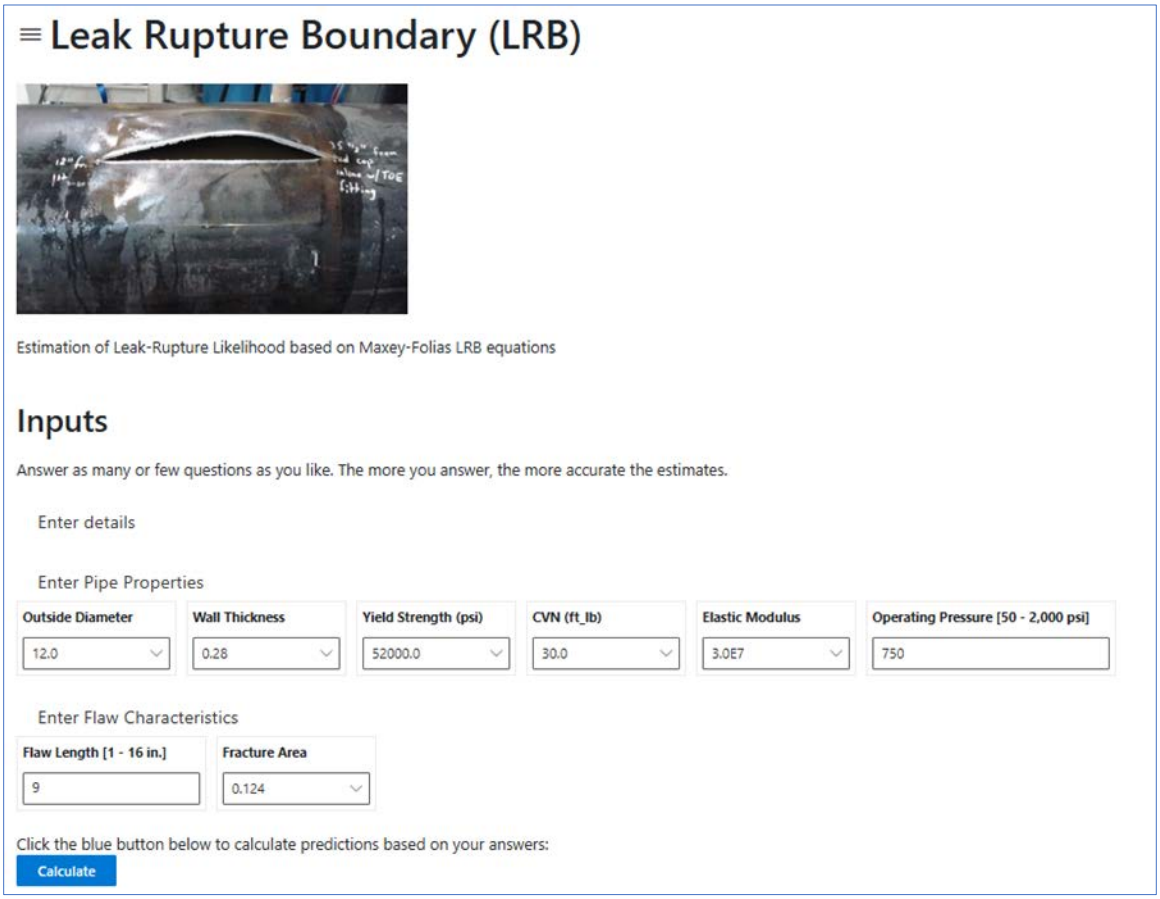


*Figure 2 - Data input of the leak-rupture entry page*

## 2: Project Schedule

Figure 1 shows the project schedule and progress as of the end of 9th Quarter. No time-related issues are reported in this quarter.

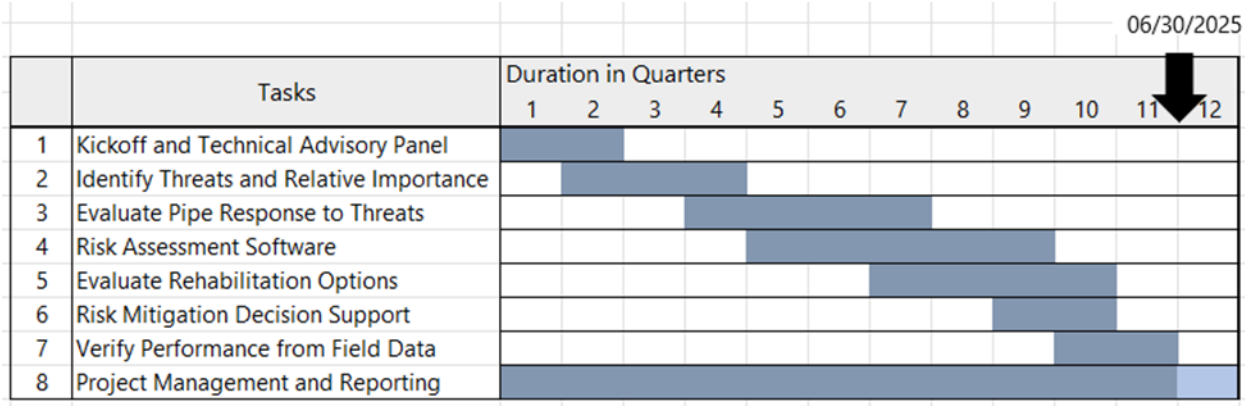


*Figure 1 - Project time schedule*

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