There are over 700,000 aboveground storage tanks in the U.S. with capacities ranging from 500 barrels to over 500,000 barrels. Many tanks leak without anyone knowing about it. Tank floor failures are insidious because they can leak product into the ground and groundwater for years before being detected.

Tank bottom corrosion and mechanical failures are caused by tanks that have settled over the years, allowing standing water to penetrate under the tank. This water ingress can cause corrosion and erode the foundation under the floor. Large, floating roof storage tanks are also particularly susceptible to bottom corrosion and leaks from both product-side and soil-side corrosion as they are more difficult to protect from corrosion using cathodic protection (CP) systems, plus they sometimes store more corrosive crude feed stocks.

Current federal, state, and local legislation has raised the stakes for facility owners that contaminate the environment as a result of storage tank failures. Several spectacular tank failures have spawned industry standards and regulations which mandate tank integrity management and inspection programs. API 653, Tank Inspection, Alteration, Repair, and Reconstruction, has become the lead industry standard governing tank inspection. Its requirements are targeted at preventing tank content releases due to brittle fracture and bottom leaks from corrosion.